

SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 914 experiments for  
(no ligands specified)

Metal : Al+++

(no references specified)

(no experimental details specified)

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e- HL Electron (442)  
Electron;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ vlt oth/un hi 100% U 1971BSe (301) 1  
K(Al + 2Al(l)=3Al+)=8.1  
Medium: Na3AlF6(l); units of B?; 1015 C

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Al+++ oth none 25°C 0.0 U 1952LAb (302) 2  
K(Al+3e=Al(s))=-84.3(-1660 mV)

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AsO4--- H3L Arsenate CAS 7778-39-4 (1557)  
Arsenate;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ oth oth/un 25°C 0.0 U 1990SAa (1128) 3  
\*K(AlAsO4(s)+H=Al+HAsO4)=-4.70  
Calculated from thermodynamic data.

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Al+++ sol oth/un 22°C var U 1956CHc (1129) 4  
Kso(AlL)=-15.80

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BO4H4- HL Borate CAS 10043-35-3 (991)  
Borate; B(OH)4-

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ nmr oth/un 25°C var C 2004TSa (1301) 5  
At 25 C by 27Al nmr. Medium: 0.02-0.2 m B(OH)3, pH 8.95.  
K(Al(OH)4+B(OH)3=Al(OH)3BO(OH)2+H2O)=1.62.

-----  
Al+++ sol oth/un 50°C var C T H 2004TSa (1302) 6  
Solubility of gibbsite or boehmite in 0.02-0.2 m B(OH)3, pH 8.95, 50-200 C  
K(Al(OH)4+B(OH)3=Al(OH)3BO(OH)2+H2O)=1.58 (50 C), 1.46 (78), 1.25 (200).

-----  
Al+++ sol none 22°C 0.0 U 1961SBc (1303) 7  
Kso(Al(OH)3L3)?=-22.92

By spectrophotometry K1=7.62?, B2=14.64?, B3=20.0? B6=38.54?

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

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ con non-aq -78°C 100% U T 1977GPa (1717) 8  
K(2AlBr3=AlBr4+AlBr2)=-6.6

Medium: CH3Br

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Al+++ EMF non-aq 210°C 100% U T H 1973TDa (1718) 9  
K(2Al4=Al2L7+L)=-4.40

Medium: (Na,Al)Br. DH(K)=20.1 kJ mol<sup>-1</sup>; K=-4.30(225 C), -4.15(240 C) m units

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Al+++ nmr oth/un 26°C var U HM 1972JOb (1719) 10  
K(2AlCl3L=AlCl4+AlCl2L2)=-0.5

K'=-0.1  
K"(2AlClL3=AlCl2L2+AlL4)=-0.4  
K': 2AlCl2L2=AlCl3L+AlClL3. DH(K)=0.2 kJ mol<sup>-1</sup>; DH(K')=-1.5; DH(K")=-0.3

-----  
Al+++ con non-aq 21°C 100% U I 1972SVa (1720) 11  
K(Al2L6=AlL2+AlL4)=-22.14

Medium: n-heptane. In benzene: K=-16.12

-----  
Al+++ con non-aq 25°C 100% U 1964WEa (1721) 12  
K3=4.9

K4=3.3  
K(2AlBr3=Al2Br6)=0.0

Medium: PhNO2

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CO3-- H2L Carbonate CAS 465-79-6 (268)  
Carbonate;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl 25°C 3.00M C I 1987HSa (3141) 13

B(-4,2,1)=-16.61  
B(-5,3,1)=-18.39

B(p,q,r); pH+qAl+rCO2(g)=HpAlq(CO2(g))r

-----  
Al+++ gl NaCl 25°C 0.60M C 19810Fa (3142) 14  
B(-4,2,1)=-20.41

B(-5,3,1)=-22.74

B(p,q,r): pH + qAl + rCO2(g) = HpAlq(CO2)r

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C6N6Co--- H3L Cyanocobaltate (5470)  
Hexacyanocobaltate; [Co(CN)6]---

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ con none 25°C 0.00 U K1=4.30 1971KKF (3485) 15

By kinetics, (K<sub>out</sub>/K<sub>1</sub>)=-1.3

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C6N6Fe--- H3L Ferricyanide (2491)  
Hexacyanoferrate (III); Fe(III)(CN)<sub>6</sub>---

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ kin KNO<sub>3</sub> 25°C 0.01M C K<sub>1</sub>=4.30 1983KLa (3629) 16  
Method: stopped flow, by conductivity measurement.

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

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ sp non-aq 25°C 100% C IH K<sub>1</sub>=1.73 B<sub>2</sub>= 2.20 1998UKb (4443) 17  
Medium: DMF, 0.2 M Et<sub>4</sub>NClO<sub>4</sub>. Also data for DMA, 0.2 M Bu<sub>4</sub>NClO<sub>4</sub>.  
By calorimetry, DH(K<sub>1</sub>)=5.1 kJ mol<sup>-1</sup>, DH(B<sub>2</sub>)=24.4, DH(B<sub>3</sub>)=34.

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Al+++ EMF non-aq 40°C 100% U 1985K0a (4444) 18  
K(A<sub>1</sub>2Cl<sub>7</sub>+Cl=2AlCl<sub>4</sub>)=-17.0  
Medium: N-1-butylpyridinium Cl. In 1-Me-3-ethylimidazolium Cl, K=-17.1

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Al+++ con non-aq -78°C 100% U T H 1977GPa (4445) 19  
K(2AlCl<sub>3</sub>=AlCl<sub>4</sub>+AlCl<sub>2</sub>)=-2.48  
Medium: CH<sub>2</sub>Cl<sub>2</sub>, at -78 and 0 C. DH=-15 kJ mol<sup>-1</sup>, DS=-125 J K<sup>-1</sup> mol<sup>-1</sup>

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Al+++ oth oth/un 550°C 100% U 1974CHb (4446) 20  
B<sub>4</sub>=5.60(x units)  
Medium: (K,Al)Cl. Method: Raman

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Al+++ EMF non-aq 300°C 100% U 1974IKa (4447) 21  
K(A<sub>1</sub>2L<sub>6</sub>+L)=7.5  
K(2AlL<sub>4</sub>=Al<sub>2</sub>L<sub>7</sub>+L)=-5.5  
Medium: (K,Al)Cl; x units. 300-450 C

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Al+++ EMF non-aq 300°C 100% U 1974IKa (4448) 22  
K(A<sub>1</sub>2L<sub>6</sub>+L)=9.5  
K(2AlL<sub>4</sub>=Al<sub>2</sub>L<sub>7</sub>+L)=-5.5  
Medium: (Cs,Al)Cl; x units. 300-450 C

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Al+++ EMF non-aq 300°C 100% U 1973BBc (4449) 23  
K(2AlL<sub>4</sub>=Al<sub>2</sub>L<sub>7</sub>+L)=-7.83  
Medium: (K,Al)Cl(51.7% KCl); m units

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Al+++ EMF non-aq 175°C 100% U T H 1973BJc (4450) 24  
K(AlL<sub>3</sub>+AlL<sub>4</sub>)=4.38  
Medium: (Na,Al)Cl;m units. DH=-54.4 kJ mol<sup>-1</sup>, DS=-38 J K<sup>-1</sup> m<sup>-1</sup>(200 C), K=4.11  
(200 C), 3.53(250 C), 3.00(300 C), 2.60(355 C). K<sub>4</sub>=10.8(200 C)

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Al+++ EMF non-aq 450°C 100% U 1973SSi (4451) 25  
 B4=25  
 K(A12L6+L)=5.70  
 K(2A1L4=A12L7+L)=-6.24  
 Medium: (Na,Al)Cl

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Al+++ EMF non-aq 175°C 100% U T H 1973TDa (4452) 26  
 K(2A1L4=A12L7+L)=-5.50  
 Medium: (Na,Al)Cl. DH(B)=28.0 kJ mol<sup>-1</sup>. K=-5.32(190 C), -5.00(210 C),  
 -4.87(225 C), -4.75(240 C) m units

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Al+++ EMF non-aq 175°C 100% U 1972FKb (4453) 27  
 K4=11.5  
 K(A1L3+A1L4)=4.4  
 Medium: (Na,Al)Cl

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Al+++ oth non-aq 300°C 100% U I 1972K0a (4454) 28  
 K(Co(A12Cl7)2+4Cl)=6.5  
 Medium: molten (LiAl)Cl. K: (Co(A12Cl7)2+4Cl)=CoCl4+2A12Cl7.  
 K=1.2(in (NaAl)Cl); 19.1((in KAl)Cl); 18.7(in (RbAl)Cl); 19.7(in (CsAl)Cl)

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Al+++ EMF non-aq 300°C 100% U T 1972K0a (4455) 29  
 K(A12L6+2A1L4=2A12L7)=1  
 Medium: (xK,(1-x)Al)Cl; 0.35<x<0.45

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Al+++ oth non-aq 170°C 100% U 19710Ra (4456) 30  
 K(A12L6+2A1L4=2A12L7)=2.1  
 Medium: (K,Al)Cl; m units. 170-240 C. Method: Raman. Error in abstract ?

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Al+++ oth oth/un ? var U K2=0.5 1971SCc (4457) 31  
 K3=-2.7  
 Method: ionophoresis

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Al+++ EMF non-aq 175°C 100% U T 1971TMa (4458) 32  
 k(2A1L4=A12L7+L)=-7.1  
 Medium: (Na,Al)Cl;K=-6.3(250 C), -5.7(300 C), -5.3(350 C), -5.0(400 C)

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Al+++ con non-aq 25°C 100% U 1970MLa (4459) 33  
 K=5.0  
 Medium: CH3COCl. K: A1L3+CH3COL=CH3CO++A1L4

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Al+++ oth non-aq 289°C 100% U 1969JSb (4460) 34  
 K(2A1L4=A12L7+L)=-3.52  
 Medium: KAlCl4; m units. Method: gas chromatography

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Al+++ con non-aq 25°C 100% U 1966WIa (4461) 35  
 K3=4.45  
 K4=3.04  
 K(2A1L3+A1L2)=3.04  
 K(A12L5+L)=2.95

Medium: PhNO2

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

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ nmr R4N.X 5°C 0.60M C K1=6.42 B2=11.83 2000BTa (6696) 36  
K3=3.99  
K4=2.50  
K5=0.84

Method: 19F nmr and potentiometry. Medium: NMe4Cl  
In 3M KCl at 25 C: K1=6.35, K2=5.25, K3=4.11.

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Al+++ sp oth/un 23°C 0.10M U 1994KGa (6697) 37  
Keff=10.7

Method: spectrophotometric using pyrocatechol violet. Tris buffer adjusted  
to a pH=5.34 with HCl

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Al+++ nmr oth/un 21°C var U 1991NMa (6698) 38  
K(Al(NDP)+F)=4.1  
K(Al(NDP)F+F)=3.1  
K(Al(NDP)F2+F)=1.8

K(Al+NDP)=7.8, K(AlF+NDP)=5.8, K(AlF2+NDP)=4.0, K(AlF3+NDP)=2.2. NDP=  
nucleoside diphosphates: guanosine diphosphate or adenosine diphosphate.

-----  
Al+++ ISE non-aq 185°C 100% M K1=6.8 B2=13.04 1988JHa (6699) 39  
B3=19.7  
B4=24.92  
B5=28.79

Medium: molten KSCN. K1=mol-1 kg, B2=mol-2 kg2 etc.

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Al+++ ISE KNO3 25°C 0.10M C K1=4.92 B2= 8.46 1988YYa (6700) 40  
Method: fluoride ion selective electrode

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Al+++ sol oth/un 50°C var M M 1987SMe (6701) 41  
K(AlF3(s)=Al+3F)=-21.2

Also mixed hydroxo-fluoro complexes. Solubility using pH and pF electrodes

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Al+++ ISE KNO3 25°C 0.10M C M K1=6.40 B2=11.64 1987YHa (6702) 42  
K3=3.86, K4=2.7

K(AlA+F)= 5.41(H3A=NTA), 5.53(H3A=HEDTA), 4.95(H4A=EDTA), 3.14(H4A=CDTA)

-----  
Al+++ gl NaNO3 25°C 0.10M M TI 1986COa (6703) 43  
B(Al(OH)F)=15.58  
B(Al(OH)F2)=20.0  
B(Al(OH)3F)=30.01  
K(AlOH+F)=6.13

K(AlOH+F)=5.97(35 C), 5.88(50 C); K(AlOH+2F)=10.36, 10.07(35 C), 9.88(50 C);  
K(Al(OH)4+F)=-3.73, -3.34(35 C); I=1.0 M, K(Al(OH)3F+OH)=-3.43

-----  
 Al+++ ISE KNO3 25°C 0.10M C M K1=6.40 B2=11.64 1986YUa (6704) 44  
 K3=3.86  
 K4=2.75  
 K(Al(edta)+F)=4.95  
 K(Al(cdta)+F)=3.14  
 Method: F ion-selective electrode. K(AlHA+F)=5.7, K(AlA+F)=4.5,  
 K(AlFA+F)=3.9. H3A is citric acid.  
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Al+++ gl KNO3 25°C 0.50M M 1985TZb (6705) 45  
 K(Al(OH)4+L=Al(OH)3L+OH)=-2.20  
 Al(OH)2L2 may form, but no Ga complexes, detected.  
 -----

Al+++ oth none 25°C 0 U 1984DYa (6706) 46  
 K(Al+F=Al(OH)F+H)=1.45  
 K(Al+2F=Al(OH)F2+H)=6.21  
 K(Al+F=Al(OH)2F+2H)=-4.76  
 K(Al+3F=Al(OH)F3+H)=-0.77  
 Recalc. of lit. data. K(Al+F=Al(OH)3F+3H)=-10.97.  
 -----

Al+++ gl R4N.X 25°C 0.20M U I K1=6.46 B2=11.44 1982KMa (6707) 47  
 B3=15.16  
 B4=17.83  
 B5=19.29  
 B6=20.46  
 -----

Al+++ cal NaClO4 25°C 0.5M C 1975VKb (6708) 48  
 DH(Al+L)=2.68 kJ/mol  
 DH(Al+3L)=5.31 kJ/mol  
 DH(Al+2L)=4.9 kJ/mol  
 Also data for 35 C  
 -----

Al+++ EMF non-aq 210°C 100% U M 1973TDa (6709) 49  
 K(2AlCl4+L=Al2Cl6L+2Cl)=-3.5  
 K(2AlBr4+L=Al2Br6L+2Br)=-4.0  
 Medium: (Na,Al)Cl and (Na,Al)Br, m units  
 -----

Al+++ ISE KNO3 25°C 0.10M U I K1=6.45 B2=11.66 1971AMb (6710) 50  
 K3=3.79  
 K4=3.18  
 K1=6.51, K2=5.29, K3=3.76, K4=3.05(I=0.05); 6.32, 5.16, 3.85, 3.30(I=0.2);  
 6.14, 5.09, 3.93, 3.68(I=0.5); At I=0(corr): K1=6.69, K2=5.35, K3=5.68, K4=2.75  
 -----

Al+++ ISE KNO3 37°C 0.10M U TI K1=6.49 B2=11.73 1971AMb (6711) 51  
 K3=3.86  
 K4=3.38  
 K1=6.71, K2=5.26, K3=3.92, K4=3.29(I=0.05); 6.39, 5.17, 3.86, 3.38(I=0.2);  
 6.29, 5.09, 3.84, 3.43. At I=0(corr): K1=6.68, K2=5.34, K3=3.94, K4=3.29  
 -----

Al+++ EMF NaClO4 25°C 1.0M U H 1971WTa (6712) 52

\*K(Al+HF=AlF+H)=3.15

\*K(AlF+HF=AlF2+H)=1.99

Method: quinhydrone electrode. By calorimetry: DH(\*K1)=3.10 kJ mol<sup>-1</sup>, DS=128 J K<sup>-1</sup> mol<sup>-1</sup>

-----  
Al+++ nmr oth/un -15°C var U 1970Mwa (6713) 53

K(2AlF=Al+AlF2)=-0.8

K(2AlF2=AlF+AlF3)=-0.9

K(2AlF3=AlF2+AlF4)=-1.4

Medium: Al(NO<sub>3</sub>,F). Method: nmr

-----  
Al+++ ISE R4N.X 25°C 0.01M U I K1=6.65 B2=12.09 1969BAa (6714) 54

K3=3.92

K4=2.38

Medium: NH<sub>4</sub>NO<sub>3</sub>. K1=6.40, K2=5.19, K3=3.91, K4=2.42(I=0.1); K1=6.29, K2=4.97, K3=3.73, K4=2.50(I=0.3); I=0(corr): K1=6.98, K2=5.62, K3=4.05, K4=2.38

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Al+++ oth oth/un 782°C 100% U 1969RLa (6715) 55

K5.K6=1.22

Medium: molten (Li,Al)F. Method: combination of thermodynamic data

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Al+++ oth oth/un 25?°C var U K1=6.08 B2=11.10 1964BSc (6716) 56

Method:refractometry.

-----  
Al+++ oth non-aq 999°C 100% U 1962Rba (6717) 57

K5K6=1.7

Method freezing point, ca.1000 C. Medium: Na<sub>3</sub>AlF<sub>6</sub>(l), ionic fraction units

-----  
Al+++ oth non-aq 930°C 100% U 1960BGe (6718) 58

K5.K6=1.45

Method: freezing point. Medium: Na<sub>3</sub>AlF<sub>6</sub>(liquid). 1008-930 C

-----  
Al+++ oth non-aq 999°C 100% U T H 1960FFb (6719) 59

K5K6=1.05

In liquid Na<sub>3</sub>AlF<sub>6</sub>, 1000-1090 C. DH(K5K6)=-92.0KJ mol<sup>-1</sup>. K5K6=0.96(1030 C), 0.82(1075 C), 0.80(1090 C). Method: density

-----  
Al+++ oth non-aq 999°C 100% U 1960ROa (6720) 60

K5K6=0.75

Method: freezing point. Medium: Na<sub>3</sub>AlF<sub>3</sub>(l), mole fraction units

-----  
Al+++ oth non-aq 930°C 100% U 1959BGh (6721) 61

K5K6=1.22

Method:freezing point. Medium: liquid Na<sub>3</sub>AlF<sub>6</sub>,930-1008 C. Ion fraction units K5K6=1.4 to 1.5 in x units

-----  
Al+++ sp oth/un ? var U K1=6.4 1959BSg (6722) 62

-----  
Al+++ EMF KNO<sub>3</sub> 25°C 0.53M U I K1=6.16 B2=11.21 1959KGa (6723) 63

K3=3.91

K4=2.71  
K5=1.46?

In NH4NO3 K3=3.57, K4=2.64, K5=1.46, K6=0.04?

-----  
Al+++ cal oth/un 25°C 0.07M U H 1959KGa (6724) 64  
DH(K1)=4.4 kJ mol<sup>-1</sup>, DS=141 J K<sup>-1</sup> mol<sup>-1</sup>. DH(K2)=3.9, DS=115; DH(K3)=0.8,  
DS=80.3; DH(K4)=0.17, DS=51.9; DH(K5)=-1.5, DS=21  
-----

Al+++ cal none 25°C 0.0 U H 1959SCe (6725) 65  
DH(K1)=4.9 kJ mol<sup>-1</sup>, DH(B2)=8.2, DH(B3)=9.1, DH(B4)=9.0, DH(B5)=9.5, DH(B6)=-5.2  
-----

Al+++ sol oth/un 25°C var U B2=9.06 1957TVa (6726) 66  
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Al+++ EMF none 25°C 0.0 U K1=7.00 1955PAa (6727) 67  
-----

Al+++ cal none 25°C 0.0 U H 1955PAa (6728) 68  
At I=0 corr: DS(K1)=160 J K<sup>-1</sup> mol<sup>-1</sup>, DS(K2)=130, DS(K3)=84, DS(K4)=54, DS(K5)  
=-8.4, DS(K6)=-25. Values also at I=0.07 M  
-----

Al+++ cal oth/un 25°C var U H 1953LJa (6729) 69  
DH(K1)=4.8 kJ mol<sup>-1</sup>, DS=130 J K<sup>-1</sup> mol<sup>-1</sup>; DH(K2)=3.3, DS=110; DH(K3)=0.8, DS=  
75; DH(K4)=1.2, DS=54; DH(K5)=-3.1, DS=21; DH(K6)=-6.5, DS=-13  
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Al+++ sp KNO3 ? 0.10M U K1=6.32 1950KLb (6730) 70  
-----

Al+++ gl oth/un 18°C var U 1949LAa (6731) 71  
B6=ca.27  
Ks(Al2F6(s))=Al+AlF6)=-9.4  
-----

Al+++ EMF KNO3 25°C 0.53M U K1=6.13 B2=11.15 1943BOa (6732) 72  
K3=3.85  
K4=2.74  
K5=1.63  
K6=0.47  
-----

B6=19.84. Method: quinhydrone electrode and redox

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HPO3-- H2L Phosphite CAS 13598-36-2 (6305)

Phosphite;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ nmr NaClO4 25°C 1.0M U K1=2.01 B2= 3.24 1999MHa (7502) 73  
B(Al2L2)=2.21

Method: Al nmr.

-----  
Al+++ nmr NaClO4 25°C 1.0M U 1999MHa (7503) 74

K(Al+HL)=2.01  
K(AlHL+HL=AlH2L2)=1.23  
K(2AlHL=Al2H2L2)=2.21

Method: nmr. L is H2PO3-.



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Al+++ nmr NaNO3 20°C 0.10M C K1=6.11 1991FWa (7504) 75  
Method: 31P nmr.

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H2PO2- HL Hypophosphite CAS 6303-21-5 (6304)  
Hypophosphite;

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

Al+++ nmr NaClO4 25°C 1.0M U H K1=2.01 B2= 3.29 1999MHa (7634) 76  
K3=1.26  
B(Al2L2)=1.11

Method: Al nmr. DH(K1)=9.3 kJ mol<sup>-1</sup>, DS=69 J K<sup>-1</sup> mol<sup>-1</sup>. DH(K2)=7.1,  
DS(K2)=48. DH(K3)=-0.3, DS(K3)=26. DH(Al2L2)=46, DS(Al2L2)=175.

-----  
Al+++ nmr NaClO4 25°C 1.0M U H K1=2.01 B2= 3.29 1999MHa (7635) 77  
K3=1.26  
K(2AlL=Al2L2)=1.11

Method: nmr. DH(K1)=9.3 kJ mol<sup>-1</sup>, DS=69 J K<sup>-1</sup> mol<sup>-1</sup>.  
DH(K2)=7.1, DS=48; DH(K3)=-0.3, DS=26; DH(Al2L2)=46, DS=175.

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Al+++ nmr NaNO3 20°C 0.10M C K1=2.38 1991FWa (7636) 78  
Method: 31P nmr.

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

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ con non-aq -78°C 100% U I 1977GPa (7883) 79  
K(2AlI3=AlI2+AlI4)=-8.15

Medium: CH3I

\*\*\*\*\*  
MoO4-- H2L Molybdate (443)  
Molybdate;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Al+++ gl NaCl 25°C 0.60M C 19890Ha (8710) 80  
B(AlH6L6)=50.95

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Al+++ EMF oth/un 25°C U 1971GLa (8711) 81  
B6=ca.19

\*\*\*\*\*  
OH- HL Hydroxide (57)  
Hydroxide;

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

Al+++ sol oth/un 50°C var C T H 2004TSa (10887) 82



\*Kso(Al(OH)3)=10.35 (fresh)

\*Kso(Al(OH)3)=9.0 (48 h)

Fresh indicates precipitate immediately after flashing reactants (10mM Al and 30 mM NaOH) together (I=0.015 M).

---

Al+++ oth none 400°C 0.00 C T 1995ANa (10896) 91

Kso(AlO1.5)=-5.666

K(Al(OH)3=Al(OH)4+H)=-3.359

From literature data on solubility of corundum (AlO1.5) in H2O and KOH.  
Data for 400-700 C at 2000 bar.

---

Al+++ gl oth/un 25°C 0.10M C 1995DJa (10897) 92

\*K1=-5.62

\*B2=-9.74

K(3Al+4H2O=Al3(OH)4+4H)=-13.7

Medium: LiCl

---

Al+++ sol NaCl 25°C 0.01M U T 1994SHa (10898) 93

K(Al(OH)3(s)+3H=Al+3H2O)=8.02

Gibbsite (Al(OH)3(s)) solubility measurements. Constant at I=0

---

Al+++ sol NaCl 25°C 0.10M C 1994WPa (10899) 94

\*Kso=8.31

\*Kso=7.74 (I=0)

Gibbsite solubility study using H electrode. Data for 50-100 C, 0-5 M NaCl  
extrapolated to 0 and 25 C. At I=0.1 M \*K1=-5.31,\*K2=-5.8,\*K3=-6.8,\*K4=-5.4

---

Al+++ sol oth/un 150°C var M TI 1993BKa (10900) 95

\*K1=-2.1

\*B2=-4.8

\*B3=-7.8

\*B4=-13.6

Boehmite solubility study at 150,200,250 C and P=10 bars.

K(AlO(OH)(s)+3H=Al+3H2O)=1.53

---

Al+++ sol none 170°C 0.0 C T 1993CDc (10901) 96

K(AlO(OH)(s)+3H=Al+2H2O)=0.81

K(AlO(OH)(s)+2H=AlOH+H2O)=-0.95

K(AlO(OH)+H=Al(OH)2)=-3.78

K(AlO(OH)+H2O=Al(OH)3)=-6.76

AlO(OH) is Boehmite. Data for 90-350 C. K(AlO(OH)+2H2O=Al(OH)4+H)=-11.75.

\*K1(Al)=-1.765, \*K2=-2.82, \*K3=-2.98, \*K4=-4.99.

---

Al+++ EMF NaCl 25°C 0.10M C TIH 1993PWa (10902) 97

\*K1=-5.31

Data at I=0.1,0.3,1.0 and 5.0 M. 25-125 C. DH(\*K1)=54.4 kJ mol<sup>-1</sup>.

H electrode. Using Pitzer evaluation. \*K1(I=0)=-4.95

---

Al+++ sol none 80°C 0.0 C 1992NLa (10903) 98

K(Al(OH)3(s)+3H=Al+3H2O)=5.00

Al(OH)<sub>3</sub>(s) is gibbsite.

---

Al+++ sol NaCl 50°C 0.10M C TIH 1992PWa (10904) 99  
\*K<sub>s</sub>(Al(OH)<sub>3</sub>+3H)=6.919

Gibbsite solubility study using H electrode. I=0.1-5.0 M( NaCl), 30,50,70 C.  
Pitzer ion interaction treatment of data. DH(\*K<sub>so</sub>)=-101.8 kJ mol<sup>-1</sup>

---

Al+++ EMF oth/un 25°C var C TIH 1992WEa (10905) 100  
K(Al(OH)<sub>4</sub>=Al(OH)<sub>3</sub>(s)+OH)=1.143

I=0.01-5.0 M, 6.4-80 C. Gibbsite solubility studies. DH(K)=-22.5 kJ mol<sup>-1</sup>

---

Al+++ gl NaCl 25°C 3.0M U 1991MBa (10906) 101  
\*B(2,2)=-7.53  
\*B(2,4)=-16.50  
\*B(3,4)=-13.44

---

Al+++ gl NaNO<sub>3</sub> 25°C 3.0M C 1991MBe (10907) 102  
\*B(2,2)=-7.55  
\*B(2,4)=-16.41  
\*B(3,4)=-13.24

---

Al+++ gl NaCl 25°C 0.60M C 1990MOa (10908) 103  
\*B(13,32)=-105.5

---

Al+++ gl NaNO<sub>3</sub> 25°C 0.50M C 1989DJa (10909) 104  
\*K<sub>1</sub>=-5.65  
\*B(2,2)=-7.03  
\*B(2,4)=-15.65  
\*B(3,4)=-12.60

---

Al+++ gl NaCl 25°C 0.60M C 1989OHa (10910) 105  
K(Al+3H<sub>2</sub>O=Al(OH)<sub>3</sub>(s)+3H)=-10.5

---

Al+++ gl NaCl 25°C 0.60M C 1989OHa (10911) 106  
\*K<sub>so</sub>(Al(OH)<sub>3</sub>)=10.49 (4 h)

Precipitate aged for 4 hours.

---

Al+++ cal none 25°C 0.0 C 1988HHc (10912) 107  
B<sub>4</sub>=32.76

Heat capacity measurements on NaAl(OH)<sub>4</sub> solutions and Al+++ solutions  
at 10-55 C. At 0 C: B<sub>4</sub>=33.71; at 50 C: B<sub>4</sub>=32.19.

---

Al+++ gl NaCl 25°C 3.00M C 1987HSa (10913) 108  
\*K<sub>1</sub>=-5.52  
\*B(3,4)=-13.96  
\*B(13,32)=-113.35

---

Al+++ sol oth/un 505°C var M M 1987SMe (10914) 109  
B(1,3,3)=30.69  
B(1,2,2)=20.80

B(1,1,2)=16.24  
B(1,y,x): Al(OH)<sub>4</sub>+yF+xH=Al(OH)<sub>(4-x)</sub>F<sub>y</sub>+xH<sub>2</sub>O. Solubility using pH and pF elec.

---

Al+++ gl NaCl 37°C 0.15M C K1=8.577 1987VBa (10915) 110  
B(AlL3)=26.138  
B(AlL4)=29.044  
B(Al3L11)=91.025  
B(Al6L15)=149.278

Constants also reported for data restricted to pH<8

---

Al+++ nmr none 20°C 0.0 U 1985AEa (10916) 111  
\*K1=-4.93

---

Al+++ gl NaNO3 25°C 0.10M C 1985BSa (10917) 112  
\*B1=-5.33  
\*B2=-10.91  
\*B(3,4)=-13.13  
\*B(13,32)=-107.47

---

Al+++ EMF NaCl 25°C 0.60M C 1985OSb (10918) 113  
\*Kso(Al(OH)<sub>3</sub>)=11.2 (20 h)

Precipitate aged for 20 h.

---

Al+++ dis oth/un 25°C var U T H 1984CMc (10919) 114  
\*K1=-5.00  
\*B4=-22.20  
20-70 C. DH(\*K1)=49.4 kJ mol<sup>-1</sup>; DH(\*B4)=177.6 kJ mol<sup>-1</sup>

---

Al+++ oth none 25°C 0 U 1984DYa (10920) 115  
\*K1=-5.0  
\*K2=-5.3  
\*K3=-5.9  
\*K4=-6.0

Recalc. of lit. data. B4=-22.24; \*Kso(Gibbsite)=8.11, Ks(Al(OH)<sub>3</sub>=Al(OH)<sub>3</sub>)=-8.13, Ks(Al(OH)<sub>3</sub>+2H)=3.12, Ks(Al(OH)<sub>3</sub>+H)=-2.22, Ks(Al(OH)<sub>3</sub>=Al(OH)<sub>4</sub>+H)=-14.13

---

Al+++ gl NaCl 25°C 0.60M C 1983OSb (10921) 116  
\*B4=-23.46

---

Al+++ oth none 80°C 0.0 C T H 1981CHa (10922) 117  
Ks(AlOOH(s)+OH=Al(OH)<sub>4</sub>)=-0.70

Calculations based on literature solubility data for boehmite, AlOOH.  
Ks(AlOOH(s)+2H<sub>2</sub>O=Al(OH)<sub>4</sub>+H)=-13.30; DH=51.9 kJ mol<sup>-1</sup>. Data for 80-300 C.

---

Al+++ gl NaCl 25°C 0.60M C 19810Fa (10923) 118  
\*K1=-5.52  
\*B(3,4)=-13.57  
\*B(13,32)=-109.2

---

Al+++ gl oth/un 25°C 6.0M U 1980BCa (10924) 119

\*K1=-5.5  
\*B3=-10.1  
\*B(13,36)=-105

Additional method: 27Al nmr. Medium: 0.5 M AlCl3.  
Polymer is Al13O4(OH)28

-----  
Al+++ sol none 25°C 0.0 U 1979MHa (10925) 120

\*Kso=8.11  
\*Ks(Al(OH)3+2H)=3.12  
\*Ks(Al(OH)3+H)=-2.02  
K(Al(OH)4+H)=14.0

-----  
Al+++ oth oth/un 20°C ? U 1979STa (10926) 121

Kso(Al(OH)3)=-32.60  
K(Al(OH)3(s)=Al(OH)2+OH)=-12.6  
\*B2=-8.30

Medium: seawater. Method: Tyndallometry

-----  
Al+++ oth none 25°C 0.0 U 1977VLa (10927) 122

B3=33.96

-----  
Al+++ kin none 25°C 0.0 U I 1975TUa (10928) 123

\*K1=-5.17  
\*B(2,2)=-6.95  
\*B(13,32)=-100.7

Further data available for NaCl concentrations of 0.003 to 0.06M

-----  
Al+++ sp NaCl04 25°C 0.10M U I K1=9.10 B2=17.65 1974NBe (10929) 124

B3=25.75

K1=9.40, B2=18.27, B3=26.75(I=0.3). K1=9.70, B2=18.88, B3=27.62(I=0.5).  
K1=10.4, B2=20.42, B3=30.16(I=1) Error in abstract?

-----  
Al+++ sol R4N.X 25°C U I 1973CHc (10930) 125

Kso(Al(OH)3(s)=Al+3OH)=-30.55

Medium: NH4Cl. In LiCl, Kso=-33.15. In NaCl, Kso=-30.75. In KCl, Kso=-30.36.  
In CaCl2, Kso=-31.00

-----  
Al+++ sol oth/un 23°C 0.10M U 1972IYa (10931) 126

Kso(Al(OH)3(s)=Al+3OH)=-32.94

\*Ks(Al(OH)3(s)+H2O=Al(OH)4+H)=-12.23 at 20 C

-----  
Al+++ gl KCl 20°C 0.10M U 1972SKa (10932) 127

K1=12.3

B3=32.0

B4=36.6

-----  
Al+++ sol oth/un 30°C U 1971DBa (10933) 128

\*Ks(Al(OH)3(s)+H)=2.59

K(Al(OH)3(s)=Al(OH)3)=-3.92

Ks(Al(OH)3+H2O=Al(OH)4)=-12.62

\*Kso=11.40



\*Kso=6.17

Method: Estimated data. \*Kso=4.62(100 C), 3.16(150 C), 2.15(200 C),  
1.36(250 C), 0.76(300 C) (gibbsite)

-----  
Al+++ sp NaCl04 25°C 0.10M U K1=9.02 B2=17.59 1969NNc (10945) 140  
B3=25.73  
-----

Al+++ sol oth/un 25°C 0.00 U 1969RPa (10946) 141  
K(Al(OH)3(s)=Al(OH)2+OH)=-15.0  
\*Ks(Al(OH)3(s)+OH)=-14.40  
-----

Al+++ sol oth/un 25°C U T 1969SBf (10947) 142  
Kso(Al(OH)3(s)=Al+3OH)=-33.7  
Kso=-33.9(20 C), -33.4(30 C)  
-----

Al+++ oth oth/un 25°C dil U 1968HCa (10948) 143  
\*K1=-4.5  
Medium: AlCl3 dil. Method: Dissociation field effect relaxation  
-----

Al+++ kin NaCl04 25°C 1.00M U 1968SRc (10949) 144  
\*K1=-4.31  
-----

Al+++ gl oth/un ? U 1967FSb (10950) 145  
Kso(Al(OH)3(s)=Al+3OH)=-31.8  
Al(OH)3: gibbsite  
-----

Al+++ gl NaCl04 25°C 2.00M U 1965AVa (10951) 146  
\*B(2,2)=-7.07  
\*B(13,32)=-104.5  
-----

Al+++ con none 25°C 0.0 U 1965NTa (10952) 147  
\*K1=-4.5  
-----

Al+++ gl NaCl04 25°C 3.00M U 1964BIb (10953) 148  
\*B(7,17)=-48.8  
\*B(13,34)=-97.6  
-----

Al+++ sol none 25°C 0.0 U 1964PCa (10954) 149  
K(Al(OH)3(s)+OH=Al(OH)4)=-0.68  
\*Kso=9.57  
\*Ks(Al(OH)3+2H=AlOH+2H2O)=5.27  
\*K(Al(OH)3+H=Al(OH)2+H2O)=1.01  
Kso(Al(OH)3(s)=M+3OH)=-32.43, \*K1(Al+H2O=AlOH+H)=-4.3  
-----

Al+++ gl NaCl04 50°C 3.0M U 1964PCa (10955) 150  
\*B(17,7)=-48.8  
\*B(34,13)=-97.6  
-----

Al+++ con none 25°C 0.0 U 1963FPc (10956) 151  
\*K1(Al+H2O=AlOH+H)=-5.02



-----  
Al+++ sol none 25°C 0.00 U 1963RAa (10957) 152  
\*Ks=-12.45 for boehmite  
\*Ks=-13.84 for bayerite  
\*Ks=-14.57 for gibbsite

\*Ks: Al(OH)3(s) + H2O=Al(OH)4 + H

-----  
Al+++ sol none 25°C 0.00 U 1962FPa (10958) 153  
Kso(Al(OH)3(s)=Al+3OH)=-33.5

Al(OH)3:gibbsite

-----  
Al+++ con none 25°C 0.0 U 1960FRa (10959) 154  
\*K1(Al+H2O=AlOH+H)=-5.02  
Kso(Al(OH)3=Al+3OH)=-33.51

Gibbsite. Also pH and solubility

-----  
Al+++ gl oth/un 25°C dil U 1960GOb (10960) 155  
\*Ks(Al(OH)3+OH)=-12.6  
\*Ks(Al(OH)3+2H=AlOH+2H2O)=5.73  
Ks(Al(OH)3=AlOH+2OH)=-22.28

-----  
Al+++ sol none 25°C 0.0 U 1958GTa (10961) 156  
Ks(Al(OH)3(s)+OH=Al(OH)4)=-0.5  
\*Ks(Al(OH)3+H=Al(OH)2+H2O)=0.4  
\*Kso(Al(OH)3+3H=Al+3H2O)=9.04  
Kso(Al(OH)3=Al+3OH)=-32.96

-----  
Al+++ gl none ? 0.0 U 1957MOa (10962) 157  
Kso=-33.45

-----  
Al+++ oth none 25°C 0.0 U 1956DPa (10963) 158  
\*Kso=9.66(Al(OH)3 amorphous)  
\*Kso=8.55(alpha-Al2O3)  
\*Kso=7.98(AlOOH, boehmite)  
\*Kso=6.48(Al(OH)3, bayerite)  
\*Kso(Al(OH)3(s)+3H=Al+3H2O)=5.70(hydrargillite); \*K(Al+4H2O=Al(OH)4+4H)=20.3

-----  
Al+++ oth none 25°C 0.0 U 1955KEa (10964) 159  
\*K1(Al+H2O=AlOH+H)=-4.96  
\*B(2,2)=-7.55  
\*B(2,2): 2Al+2H2O=Al2(OH)2+2H. Method: freezing point etc.

-----  
Al+++ EMF oth/un 20°C var U T 1955SCc (10965) 160  
Kso(Al(OH)3)=-32.90  
\*Ks(Al(OH)3+OH)=-12.74  
Kso=-31.72, \*Ks=-12.87(30 C). Method: Sb electrode

-----  
Al+++ gl oth/un 20°C 0.60M U I 1954FAa (10966) 161  
\*K1(Al+H2O=AlOH+H)=-5.97  
\*B(2,2)=-8.24

Medium: Ba(NO<sub>3</sub>)<sub>2</sub>. In 0.12 M Ba(NO<sub>3</sub>)<sub>2</sub> \*K<sub>1</sub>=-5.74, \*B(2,2)=-8.06

---

Al+++ gl none 25°C 0.0 U T 1954STa (10967) 162  
\*K<sub>1</sub>(Al+H<sub>2</sub>O=AlOH+H)=-4.98

\*K<sub>1</sub>=-5.28(15 C), -5.15(20 C)

---

Al+++ gl none 25°C 0.0 U 1953IYa (10968) 163  
\*K<sub>1</sub>(Al+H<sub>2</sub>O=AlOH+H)=-5.10

---

Al+++ gl oth/un 22°C var U 1953KFa (10969) 164  
K<sub>so</sub>(Al(OH)<sub>3</sub>)=-29.92

---

Al+++ EMF none 18°C 0.0 C I 1950AFa (10970) 165  
K<sub>so</sub>(Al(OH)<sub>3</sub>)=-31.7

Method: H electrode. By solubility, dil. soln., B<sub>3</sub>=26.96

---

Al+++ gl oth/un 18°C 0.01M U I 1949LAa (10971) 166  
\*K<sub>1</sub>(Al+H<sub>2</sub>O=AlOH+H)=-4.60  
K<sub>so</sub>(Al(OH)<sub>3</sub>(s)=Al+3OH)=-33.8

At I=0 corr: \*K<sub>s</sub>(Al(OH)<sub>3</sub>+OH)=-13, \*K<sub>so</sub>(Al(OH)<sub>3</sub>)=-34.0

---

Al+++ oth oth/un 20°C var U 1943CFa (10972) 167  
K<sub>s</sub>(Al(OH)<sub>3</sub>(s)+OH=Al(OH)<sub>4</sub>)=1.82  
\*K=-12.19

---

Al+++ oth oth/un ? var U 1943KTa (10973) 168  
K<sub>so</sub>=ca. -32

---

Al+++ cal oth/un 20°C 30% U 1942RWa (10974) 169  
Medium: 30% w/w NaOH. DH(K<sub>s</sub>(Al(OH)<sub>3</sub>(s)+OH))=15.9 kJ mol<sup>-1</sup>  
At 77.3 C: DH=22.8. Al(OH)<sub>3</sub> as hydrargillite

---

Al+++ gl oth/un 25°C dil U 1938OKa (10975) 170  
K<sub>so</sub>(M(OH)<sub>3</sub>(s)=M+3OH)=-31.7  
\*K<sub>s</sub>(Al(OH)<sub>3</sub>+OH)=-11.92

---

Al+++ con oth/un 25°C var U 1934MAa (10976) 171  
K<sub>4</sub>=2.78  
\*K<sub>4</sub>=-11.22

---

Al+++ oth oth/un 18°C var U 1933FMa (10977) 172  
K<sub>so</sub>=-12.2(fresh)  
K<sub>so</sub>=-13.8(aged)

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Al+++ EMF oth/un rt var C 1930TRa (10978) 173  
\*K<sub>s</sub>(Al(OH)<sub>3</sub>(s)+OH)=-12.98

---

Al+++ sol oth/un 18°C 0.62M U 1929FRa (10979) 174  
\*K<sub>s</sub>(Al(OH)<sub>3</sub>+OH)=-12.44(fresh)  
\*K<sub>s</sub>=-13.89(after 24 h)

-----  
 Al+++ con oth/un 25°C ? U T 1920HEa (10980) 175  
 $K_s(\text{Al}(\text{OH})_3 + \text{OH} = \text{Al}(\text{OH})_4) = 1.54$   
 Al(OH)<sub>3</sub> fresh. At 25 C: K=1.85, or K=0.18(25 C, crystalline)  
 -----

Al+++ oth oth/un 15°C var U 1920KOb (10981) 176  
 $K_s(\text{Al}(\text{OH})_3(\text{s}) + \text{OH} = \text{Al}(\text{OH})_4) = 1.60$   
 $*K_s = -12.40$   
 -----

Al+++ kin oth/un 100°C 0.01M U K1=9.49 1913KUa (10982) 177  
 $*K_1(\text{Al} + \text{H}_2\text{O} = \text{AlOH} + \text{H}) = -2.88$   
 -----

Al+++ sol oth/un 19°C var U 1911SLa (10983) 178  
 $K_s(\text{Al}(\text{OH})_3 + \text{OH} = \text{Al}(\text{OH})_4) = -0.74$   
 By solubility K=-0.48  
 -----

Al+++ oth oth/un 25°C var U I 1908DEa (10984) 179  
 $*K_1(\text{Al} + \text{H}_2\text{O} = \text{AlOH} + \text{H}) = -4.29$   
 -----

Al+++ kin oth/un 77°C var U T 1899LEa (10985) 180  
 $*K_1(\text{Al} + \text{H}_2\text{O} = \text{AlOH} + \text{H}) = -4.12$   
 $*K_1 = -3.4(99.7 \text{ C})$ . At 25 C, I=0 corr:  $*K_1 = 4.85$   
 -----

P04--- H3L Phosphate CAS 7664-38-2 (176)  
 Phosphate;  
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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Al+++	gl	KCl	25°C	0.20M	C	M		K1=13.50 B(AlHL)=17.60 B(AlH2L)=19.65 B(AlH-1L)=8.37 B(Al2L)=17.42	2001LEa (13081)	181
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B(Al2H-2L)=11.05, B(Al2H-3L)=6.9. For citrate: B(AlH2(cit)L)=28.46,  
 B(AlH(cit)L)=25.02, B(Al(cit)L)=19.68, B(AlH-1(cit)L)=12.03. Also 31P nmr.  
 -----

Al+++	gl	KCl	25°C	0.20M	C			B(AlHL)=17.60 B(Al2L)=16.65 B(Al2H-1L)=14.21 B(Al2H-3L)=7.42	1996AKa (13082)	182
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Al+++	gl	NaClO4	25°C	3.00M	C	I		B(1,1,1)=0.13 B(1,2,2)=1.04 B(3,5,2)=-0.81 B(3,6,3)=0.23 B(3,8,3)=-6.11, B(3,6,4)=2.62, B(3,8,5)=0.98, B(3,6,1)=-9.60. Values at I=0.0 M calculated.	1996CIa (13083)	183
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Al+++ gl NaClO4 25°C 3.0M M I 1996CIa (13084) 184  
 $K(Al+H3L=AlH2L+L)=0.13$   
 $K(Al+2H3L=AlHL+2H)=1.04$   
 $K(3Al+2H3L=Al3HL2+5H)=-0.92$   
 $K(3Al+3H3L=Al3H3L3+6H)=0.15$   
 $K(3Al+3H3L=Al3HL3+8H)=-6.17$ ,  $K(3Al+4H3L=Al3H6L4+6H)=2.69$ . At I=0:  $K(Al+H3L=AlH2L+H)=0.6$ ,  $K(3Al+2H3L=Al3HL2+5H)=0.3$ ,  $K(3Al+3H3L=Al3H3L3+6H)=2.5$

---

Al+++ gl NaCl 37°C 0.15M U K1=15.32 1991DEa (13085) 185  
 $B(AlHL)=17.79$   
 $B(AlH2L)=20.93$   
 $B(Al2L)=18.72$   
 $B(Al2H-2L)=12.58$

---

Al+++ nmr NaNO3 20°C 0.10M C K1=17.26 1991FWa (13086) 186  
Method: 31P nmr.

---

Al+++ gl NaCl 37°C 0.15M C K1=15.660 B2=20.88 1990DFa (13087) 187  
 $B(AlHL)=19.072$   
 $B(AlH2L)=22.247$   
 $B(AlH-2L2)=15.796$   
 $B(AlH-3L2)=6.667$

---

Al+++ gl NaCl 25°C 0.15M C 1988JVa (13088) 188  
 $B(AlHL)=23.25$   
 $B(AlH2L)=26.18$   
 $B(AlHL2)=37.95$

---

Al+++ con oth/un 25°C 0.06M U 1978RPa (13089) 189  
 $K(Al+H2PO4)=3.06$

---

Al+++ gl NaClO4 25°C 0.10M U M 1975RMa (13090) 190  
 $K(Al+HPO4)=9.17$   
 $K(Al+citrate+HPO4)=19.29$   
 $K(Al+NTA+HPO4)=23.89$   
 $K(Al+Cys+HPO4)=15.66$

---

Al+++ ix R4N.X ? 0.20M U 1974FGc (13091) 191  
 $K(2Al+H3L=Al2HL+2H)=-1.96$

---

Al+++ sol none 25°C 0.0 U 1961TGa (13092) 192  
 $Ks(K3Al5H-10H2L8(H2O)18)(\text{taranakite})=-22.5$  ?  $Ks((NH4)3Al5H-10H2L8(H2O)18)=19.3$  ?. L-Al complex neglected

---

Al+++ sol none 25°C 0.0 U 1959LPb (13093) 193  
 $Ks(Al(H2L)(OH)2)=-30.5$   
 $Ks(Al(H2L)H-2(H2O)2)(\text{variscite})=-2.48$

---

Al+++ sol oth/un 25°C var U 1957TVa (13094) 194  
 $Kso(AlL)=-10.41$

-----  
 Al+++ sol none ? 0.0 U 1955KJa (13095) 195  
 Ks(Al(H2L)(OH)2)=-28.0  
 -----

Al+++ sol oth/un 19°C var U 1951ZHa (13096) 196  
 Kso(AlL)=-18.24  
 -----

Al+++ sol NaCl ? 0.05M U 1950CJa (13097) 197  
 Kso(Al(H2L)(OH)2)=-29.55  
 -----

Al+++ con oth/un 18°C 0.10M U 1931BDb (13098) 198  
 K(Al+H2L)=3 ?  
 K(AlH2L+H2L)=2.3  
 K(Al(H2L)2+H2L)=2.3  
 K(AlHL+H)=2.1

Also quinhydrone electrode. K(AlHL(H2L)+H)=2.1 and others  
 \*\*\*\*\*

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
Al+++	gl	KCl	25°C	0.20M	C		K1=13.74 B2=19.77 B(AlHL)=17.03 B(AlH2L)=18.69 B(AlH-1L)=7.41 B(AlHL2)=25.64	1996AKa (13560)	199

-----  
 Al+++ gl NaCl 25°C 0.15M C K1=14.30 1988JVa (13561) 200  
 B(AlHL)=19.20  
 B(AlH2L)=22.79  
 -----

\*\*\*\*\*  
 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
Al+++	gl	KCl	25°C	0.20M	C		K1=13.15 B2=19.14 B(AlHL)=16.65 B(AlH2L)=18.07 B(AlH-1L)=6.53 B(AlHL2)=24.43	1996AKa (13836)	201

-----  
 Al+++ gl NaCl 25°C 0.15M C K1=17.31 1988JVa (13837) 202  
 B(AlHL)=20.98  
 B(AlH-1L)=11.72  
 -----

Al+++ gl KNO3 35°C 0.10M U 1980KHc (13838) 203  
 K(AlL+thr)=7.55  
 K(AlL+ala)=7.51

K(AlI+pro)=8.63

K(AlI+val)=7.90

K(AlI+gly)=7.97. For tyrosine: K(AlI+HA)=7.95, \*K(AlI(HA))=-7.15.

K(AlI+HgIy-gly)=4.18, \*K(AlI(HgIy-gly))=-5.53. Data for other aminoacids.

\*\*\*\*\*

P309--- H3L CAS 13566-25-1 (235)

Cyclotrimetaphosphate;

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

Al+++ cal oth/un 25°C 0.10M C H K1=3.05 1983GGb (13944) 204

Medium: 0.10 M HCl. DH(K1)=19.6 kJ mol<sup>-1</sup>, DS(K1)=124 J K<sup>-1</sup> mol<sup>-1</sup>.

\*\*\*\*\*

P4012---- H4L CAS 13598-74-8 (234)

Cyclotetrametaphosphate;

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

Al+++ cal oth/un 25°C 0.10M C H K1=3.29 1983GGb (13996) 205

Medium: 0.10 M HCl. DH(K1)=37.8 kJ mol<sup>-1</sup>, DS(K1)=190 J K<sup>-1</sup> mol<sup>-1</sup>.

\*\*\*\*\*

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

Sulfide;

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

Al+++ vlt oth/un 25°C 0.72M C I 1999AVb (14306) 206

K(Al+HL)=13.0

Method: determination of free S-- by cathodic stripping voltammetry.

Medium: seawater, pH 8.0, S=35. Also data for S=21 and 10.5.

\*\*\*\*\*

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

Thiocyanate;

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

Al+++ sp oth/un 25°C 7.5M C K1=0.18 2001SZa (14800) 207

Method: Raman spectroscopy. Medium: NaSCN.

-----  
Al+++ cal non-aq 25°C 100% C IH K1=2.1 B2= 3.60 1996TSa (14801) 208

K3=1.4

K4=1.0

Medium: N,N-Dimethylformamide, 0.20 M Et4NC104. Also data at 0.4 M Et4NC104

DH(K1)=9.0 kJ mol<sup>-1</sup>, DH(K2)=13, DH(K3)=0, DH(K4)=12.

-----  
Al+++ sp non-aq 25°C 100% U IH K1=2.66 1985PWa (14802) 209

Medium: dimethylsulphoxide. K1 extrapolated to I = 0.0

-----  
Al+++ sp none 22°C 0.0 U T K1=0.42 1963VMa (14803) 210

\*\*\*\*\*

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sol	none	25°C	0.0	C T H				1999PPb (15966)	211
Ks(Ca6[Al(OH)6]2(SO4)3=6Ca+2Al(OH)4+3SO4+4OH)=-44.9. Data for 5-75 C. DH(Ks)=204.6 kJ mol-1, DS(Ks)=170 J K-1 mol-1. Solid phase is ettringite.										
Al+++	EMF	NaCl	50°C	0.10M	C T H		K1=2.3	B2= 3.90	1999RWa (15967)	212
Method: Pt/H2 electrode. Data for 0.3-1.0 M NaCl, 50-125 C. DH(K1)=-10 kJ mol-1, DS=10 J K-1 mol-1; DH(B2)=10, DS=100. At I=0, K1=3.7, B2=5.6										
Al+++	EMF	none	25°C	0.0	C T H		K1=1.72		1989JJb (15968)	213
Method: Hg/Hg2SO4 electrode. Data for 5-35 C. DH(K1)=56.1 kJ mol-1, DS(K1)=221 J K-1 mol-1.										
Al+++	EMF	KCl	25°C	1.00M	C T H		K1=3.35		1988MMa (15969)	214
K1/mol-1 kg; DH(K1)=6.6 kJ mol-1, DS=86.2 J K-1 mol-1(25 C); 50 C: K1=3.59; 75 C: 4.08; 100 C: 4.66; 125 C: 5.34										
Al+++	kin	KNO3	25°C	0.01M	C		K1=3.19		1983KLa (15970)	215
Method: stopped flow, by conductivity measurement.										
Al+++	cal	NaClO4	25°C	1.0M	C T H		K1=0.45	B2= 0.76	1982LMb (15971)	216
Data for 25-70 C. DH(K1)=29.0 kJ mol-1, DH(K2)=10.3. At 70 C, K1=1.11, DH(K1)=28.4; K2=0.91, DH(K2)=47.3										
Al+++	sol	none	25°C	0.0	C				1982NOa (15972)	217
Kso(alunogen)=-7.0 Kso(jurbanite)=-17.8 Kso(alunite)=-85.4 Kso(basaluminite)=-117.7 Method: derived from literature data. Alunogen:Al2(SO4)3.17H2O. Jurbanite: Al(SO4)OH.5H2O. Alunite:KAl3(SO4)2(OH)6. Basaluminite:Al4(SO4)(OH)10.5H2O										
Al+++	nmr	oth/un	?	var	U				1972AGa (15973)	218
K1in=-0.6										
Al+++	sol	none	25°C	0.0	U				1972IYa (15974)	219
Kso(Al(OH)2.56(L)0.22)=-29.6 In paper, formula expressed as: Al(OH)2.66(L)0.22, printing error?										
Al+++	kin	oth/un	25°C	dil	U		K1=3.3		1971KKa (15975)	220
K1out=3.12 K1in=-0.7										
Al+++	sp	NaClO4	25°C	5.0M	U IH		K1=1.20		1971KVa (15976)	221
K1out=1.07 I=1 K1=1.48; I=3 K1=1.16; I=0(corr) K1=3.89										

-----  
Al+++ EMF none 15°C 0.0 U T H K1=1.75 B2=2.25 1970SPd (15977) 222  
At 5 C: K1=1.60; 25 C: K1=1.90, K2=0.80; 35 C: K1=2.08, K2=1.05.  
DH(K1)=25 kJ mol<sup>-1</sup>, DH(K2)=46  
-----

Al+++ nmr oth/un 25°C var U 1969AGa (15978) 223  
B(Al+HL)=0.5  
Method:N.M.R.  
-----

Al+++ cal none 25°C 0.0 U H K1=3.01 B2=4.90 1969IEa (15979) 224  
DH(K1)=9.6 kJ mol<sup>-1</sup>, DS=89.5 J K<sup>-1</sup> mol<sup>-1</sup>; DH(K2)=3.3, DS=47.2  
-----

Al+++ sol oth/un 20°C var U T 1969SBf (15980) 225  
Kso(Al(OH)2.5(L)0.25)=-29.5  
Kso(Al(OH)2.5(L)0.25)=-29.3(25 C), -29.1(30 C)  
-----

Al+++ sol none 0.0 U 1969SIa (15981) 226  
Kso=ca.33 (fresh)  
Ks(Al(OH)2.5(L)0.25)=-28.6  
-----

Al+++ oth oth/un var U K1=2.57 1969SMi (15982) 227  
Method: coagulation  
-----

Al+++ con oth/un 25°C 0.0 U K1=3.73 1965NTa (15983) 228  
-----

Al+++ kin oth/un 25°C 0.10M U 1963BLa (15984) 229  
K(Al(aq)+L(aq)=Al(H2O)L)=1.28  
K(Al(H2O)L=ALL)=-1 to -2  
Method: pressure jump  
-----

Al+++ EMF NaClO4 25°C 0.60M U I K1=1.30 B2=2.30 1962BWa (15985) 230  
Method: Pb electrode. At I=0 corr. K1=3.2, K2=1.0  
-----

Al+++ sp oth/un 30°C 0.0 U K1=2.04 1962NAC (15986) 231  
\*\*\*\*\*  
SiO3-- H2L Silicate CAS 7699-41-4 (747)  
Silicate; SiO2(OH)2--  
-----

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

Al+++ gl KCl 25°C 0.10M C T H 1996PSb (17194) 232  
K(Al+H4SiO4=AlH3SiO4+H)=-2.38  
Data for 90 and 150 C. DH(Al+H4SiO4)=66.66 kJ mol<sup>-1</sup>, DS(Al+H4SiO4)=  
177 J K<sup>-1</sup> mol<sup>-1</sup>.  
-----

Al+++ nmr oth/un RT 4.0M C 1995LMd (17195) 233  
Ks(Al(OH)2SiO2(OH)(s)+2OH=HSiO3+Al(OH)4)=-3.0  
Method: 27Al nmr. Medium: 4.0 M NaOH.  
-----

Al+++ gl NaClO4 25°C 0.0 M 1994FLa (17196) 234  
-----



$$K(\text{Al}+\text{H}_2\text{L}=\text{AlHL}+\text{H})=-2.50$$

-----  
 Al+++ sol NaCl 25°C 0.01M U T 1994SHa (17197) 235

$$*K_s(\text{imogolite})=13.04$$

\*K<sub>s</sub>(imogolite):K(Al<sub>2</sub>SiO<sub>3</sub>(OH)<sub>4</sub>(s)+6H=2Al+Si(OH)<sub>4</sub>+3H<sub>2</sub>O). Constant at I=0  
 -----

Al+++ sol NaNO<sub>3</sub> 25°C 0.10M U 1986MKa (17198) 236

$$*K_s(\text{kaolinite})=7.42$$

\*K<sub>s</sub>(kaolinite):Al<sub>2</sub>Si<sub>2</sub>O<sub>3</sub>(OH)<sub>4</sub>(s)+6H=2Al+2Si(OH)<sub>4</sub>+3H<sub>2</sub>O. Constants at I=0 corr  
 -----

Al+++ oth none 60°C 0.0 U T 1969HEa (17199) 237

$$*K_s(\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4+6\text{H})=4.75$$

Method: estimated data.(kaolinite,Al<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>(OH)<sub>4</sub>).

\*K<sub>s</sub>=2.27(100 C); -0.12(150 C); -1.72(200 C); -2.98(250 C); -4.02(300 C)  
 -----

Al+++ oth none 60°C 0.0 U T 1969HEa (17200) 238

$$*K_s(\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4+6\text{H})=5.63$$

Method: estimated data.(dickite,Al<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>(OH)<sub>4</sub>).

\*K<sub>s</sub>=3.10(100 C); 0.69(150 C); -0.90(200 C); -2.13(250 C); -3.09(300 C)  
 -----

Al+++ oth none 60°C 0.0 U T 1969HEa (17201) 239

$$*K_s(\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4+6\text{H})=8.03$$

Method: estimated data.(halloysite,Al<sub>2</sub>Si<sub>2</sub>O<sub>5</sub>(OH)<sub>4</sub>).

\*K<sub>s</sub>=5.21(100 C); 2.50(150 C); 0.67(200 C); -0.75(250 C); -1.89(300 C)  
 -----

Al+++ oth none 150°C 0.0 U T 1969HEa (17202) 240

Method:estimated data.\*K<sub>so</sub>(K<sub>0.6</sub>Mg<sub>0.25</sub>Al<sub>2.3</sub>Si<sub>3.5</sub>O<sub>10</sub>(OH)<sub>2</sub>+8H)=0.81,6.85(60 C),  
 3.82(100 C),-1.23(200 C),-2.87(250 C),-4.29(300 C),(illite)  
 -----

Al+++ oth none 150°C 0.0 U T 1969HEa (17203) 241

Method:est.data. \*K<sub>s</sub>(KFe<sub>3</sub>AlSi<sub>3</sub>O<sub>10</sub>(OH)<sub>2</sub>+10H)=10.8. \*K<sub>s</sub>=18.7(60 C),14.7(100 C)  
 8.0(200 C), 5.8(250 C), 3.9(300 C),(annite).  
 -----

Al+++ oth none 150°C 0.0 U T 1969HEa (17204) 242

$$*K_{so}=-2.37$$

Method:estimated data. \*K<sub>so</sub>(montmorillonite):(K<sub>0.33</sub>Al<sub>2.33</sub>Si<sub>3.67</sub>O<sub>10</sub>(OH)<sub>2</sub>(s)+  
 12.7H).Also at 60-300 C: 3.00(60 C); 0.31(100 C); -4.17(200 C); -6.9(300 C).  
 -----

Al+++ gl oth/un 400°C dil U I 1961HMa (17205) 243

$$K=3.0$$

K: Na-feldspar(s)+H=Na-mica,paragonite(s)+3SiO<sub>2</sub>(s)+Na. Also other equilibria  
 -----

Al+++ oth oth/un 200°C var U 1959HEa (17206) 244

$$K=4.9$$

By chemical analysis. P=1000 atm. Data also for mica to kaolinite etc.

K(1.5K-feldspar+H=0.5K-mica+3SiO<sub>2</sub>(s)+K)=3.55(300C), 2.7(400C), 2.1(500C).

\*\*\*\*\*

CH<sub>2</sub>O<sub>2</sub> HL Formic acid CAS 64-18-6 (37)

Methanoic acid; H.COOH  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	kin	KNO3	25°C	0.01M	C		K1=1.28	1983KLa (17588)	245
Method: stopped flow, by conductivity measurement.									
Al+++	gl	NaNO3	25°C	1.0M	U		B2=2.02	1976KIb (17589)	246
Al+++	gl	NaNO3	25°C	1.00M	U		K1=1.3	1975KIb (17590)	247
Al+++	oth	oth/un	25°C	1.00M	U		K1=0.56 B2=1.76	1973TRc (17591)	248
Al+++	ix	oth/un	25°C	1.0M	U		K1=1.78	1962TSa (17592)	249
*****									
CH4O		L			Methyl alcohol		CAS 67-56-1	(597)	
Methanol; CH3.OH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	EMF	alc/w	20°C	100%	U			1964GUa (17874)	250
							K(2Al+3H-1L=Al2(H-1L)3)=42.0		
							K(Al2(H-1L)3+H-1L)=11.1		
							K(Al(H-1L)2+H-1L)=10.5		
							K(Al(H-1L)3+H-1L)=5.5		
Method: H electrode. Medium: MeOH, 1.0 M Me4NCl									
*****									
CH5O3P		H2L					CAS 13590-71-1	(1752)	
Methylphosphonic acid; CH3.PO3H2									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.20M	C		K1=6.48 B2=12.3	1996AKa (18122)	251
							B(AlH-1L)=2.33		
							B(AlH-2L)=-3.91		
							B(AlH-1L2)=5.8		
*****									
CH6O6P2		H4L			Medronic acid		CAS 1984-15-2	(2384)	
Methanediphosphonic acid; CH2(PO3H2)2									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	U		K1=14.08 B2=23.01	1967KLa (18274)	252
							K(Al+HL)=9.05		
							K(Al+2HL)=13.66		
*****									
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
Al+++	gl	KCl	25°C	0.10M	U		K1=13.5 B2=22.80	1975SSa (18416)	253

\*\*\*\*\*

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  
-----  
Al+++ EMF NaCl 25°C 0.60M C M 2003BTa (18777) 254

B(AlLF)=11.53  
B(AlLF2)=15.67  
B(AlL2F)=15.74  
B(AlL2F2)=19.09

Method: quinhydrone electrode and fluoride ISE.

-----  
Al+++ gl NaClO4 25°C 1.0M C I K1=6.03 B2=11.05 1999CIb (18778) 255

B3=15.02  
B(2,2,2)=5.14; B(336)=-21.41  
B((7,17,3))=-43.2; B(353)=-0.87  
B(2,2,3)=-9.47

At I=0 (by SIT): K1=8.3, B2=14.1, B3=17.2

B(pqr):pAl+qH2O+rL=ALp(OH)(q-r)Lr+qH

-----  
Al+++ sol oth/un 80°C var U M K1=8.3 1994FHa (18779) 256  
B3=18.1

Alternatively data may be explained with formation of Al(OH)2L and Al(OH)L

-----  
Al+++ sol NaCl 25°C 0.60M C 1986BHc (18780) 257

B(-9,3,1,0)=-21.87  
B(-4,1,1,1)=-5.61

B(-9,3,1,0):3Al+H2L=Al3(OH)7L(s)+9H; B(-4,1,1,1):Na+Al+H2L=NaAl(OH)2L(s)

-----  
Al+++ gl NaCl 25°C 0.60M C M 1985SOa (18781) 258

B(-1,1,1)=1.40  
B(-2,1,1)=1.43  
B(-4,1,2)=1.85  
B(-6,1,3)=1.26

B(-9,3,3)= -4.28; B(-10,2,4) = -4.62. B(p,q,r) for pH+qAl+r(H2L)=HpAlq(H2L)r

-----  
Al+++ gl NaCl 37°C 0.15M C K1=5.02 B2=9.33 1982JCa (18782) 259

B3=12.41  
B(AlHL)=6.63  
B(AlH-1L2)=7.07  
B(AlH-1L3)=9.52

-----  
Al+++ nmr none 25°C 0.0 U K1=7.18 B2=13.49 1977Jbb (18783) 260  
B3=17.53

-----  
Al+++ vlt NaClO4 25°C 1.00M U K1=4.90 1970GMi (18784) 261

-----  
Al+++ gl NaClO4 25°C 1.00M U K1=4.85 1970GMi (18785) 262  
-----

Al+++ EMF NaClO4 25°C 1.00M U K1=6.06 B2=11.09 1968BCa (18786) 263  
B3=15.12

-----  
Al+++ dis NaClO4 20°C 0.10M U 1963STc (18787) 264  
B3=15.60

-----  
Al+++ gl oth/un ? ? U K1=7.26 B2=12.11 1957BDc (18788) 265  
K3=1.31

-----  
Al+++ gl KNO3 32°C 1.0M U K2=5.45 1957DSa (18789) 266  
K3=3.69

-----  
Al+++ gl none 18°C 0.0 U B2=13 1949LAb (18790) 267  
B3=16.3

\*\*\*\*\*  
C2H3NO4 HL CAS 625-75-2 (2968)  
Nitroacetic acid; O2N.CH2.COOH

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

-----  
Al+++ kin oth/un 18°C 0.20M U K1=0.48 1949PEa (19206) 268  
Medium: Ba(NO3)2

\*\*\*\*\*  
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

-----  
Al+++ sol oth/un 60°C 0.02M M TI K1=2.33 B2=4.10 1994BCa (19881) 269  
Measurements at 60-200 C

-----  
Al+++ EMF NaCl 25°C 0.10M C TIH K1=2.02 B2=3.5 1994PBa (19882) 270  
Measurements at 25-150 C and I=0.1-1.0 M. Pitzer formalism and equations.  
DH(K1)=17 kJ mol-1; DH(B2)=40 kJ mol-1

-----  
Al+++ sol oth/un 80°C var U K1=2.9 B2=4.8 1991FEa (19883) 271  
Gibbsite solubility measurements.Constants at I=0

-----  
Al+++ gl NaCl 25°C 0.60M C 1989MOa (19884) 272  
K(2Al+HL=Al2(OH)2L+3H)=-7.98

-----  
Al+++ gl NaNO3 25°C 1.00M U K1=1.4 1975KIb (19885) 273

\*\*\*\*\*  
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

-----  
Al+++ gl NaCl 37°C 0.15M C 2002DCa (21487) 274  
B(Al2H-2L)=0.361

-----  
Al+++ gl KCl 25°C 0.20M C K1=5.91 1997KsA (21488) 275  
B(AlH-1L)=1.08  
B(Al2H-1L)=4.35  
-----

Al+++ gl NaNO3 25°C 0.50M C 1989DJa (21489) 276  
B(Al2H-2L2)=6.56  
B(AlH-3L)=-7.53  
-----

Al+++ oth NaClO4 35°C 0.01M U 1984YSa (21490) 277  
B3=19.40  
-----

Method: paper electrophoresis.

-----  
Al+++ gl KNO3 35°C 0.10M U M 1980KHb (21491) 278  
B(AlL(tripolyphosphate))=7.97  
-----

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

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

Al+++ gl KCl 25°C 0.20M C K1=8.15 B2=15.77 1995FKa (21804) 279  
B3=21.5  
B(AlH-1L2)=10.40  
B(AlH-2L2)=1.04  
-----

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

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

Al+++ gl KCl 25°C 0.10M C K1=11.74 B2=22.94 1995LMA (22487) 280  
B(ALHL)=17.60  
-----

\*\*\*\*\*  
C2H7O3P H2L CAS 71778-99-9 (1978)  
Ethylphosphonic acid; CH3.CH2.PO3H2  
-----

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

Al+++ gl KCl 25°C 0.20M C K1=6.63 B2=12.1 1996AKa (22566) 281  
B(AlH-1L)=2.34  
B(AlH-2L)=-3.93  
B(AlH-1L2)=6.1  
-----

\*\*\*\*\*  
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  
-----

Al+++ oth non-aq ? 100% U M 1962BBa (23128) 282  
-----

K(4A12A6L=A18A24L4)=6.2

Method: freezing point. Medium: benzene. HA=isopropylalcohol

\*\*\*\*\*

C2H8O7P2 H4L HEDPA CAS 2809-21-4 (436)

1-Hydroxyethane-1,1-diphosphonic acid; CH3.C(OH)(PO3H2)2

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

Al+++ gl KNO3 25°C 0.10M C K1=19.12 2002GKc (23356) 283  
B(A1H-1L)=13.93  
B(A1H-2L)=2.71  
B(A1H3L2)=44.28

-----  
Al+++ gl KNO3 25°C 0.10M C K1=22.7 B2=31.10 1998LDa (23357) 284  
B(A1HL)=27.2  
B(A1H2L)=29.1  
B(A12HL)=38.7  
B(A1H2L2)=43.1

B(A1H-1L)=17.6

-----  
Al+++ gl KCl 25°C 0.10M U K1=15.29 B2=22.26 1967KLa (23358) 285  
K(A1+H-1L)=21.37  
K(A1+2H-1L)=25.87  
K(2A1+H-1L)=27.25  
K(2A1+L)=19.33

\*\*\*\*\*

C2H9NO6P2 H4L IDPA CAS 32545-63-4 (1335)

Imino-N,N-bis(methylenephosphonic acid); HN(CH2PO3H2)2

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

Al+++ gl KNO3 25°C 0.1M C B2=20.60 1985MMa (23451) 286  
K(A1L(OH)+H)=6.92

\*\*\*\*\*

C2H16N5O4Co HL (231)

Pentaammineoxalatocobalt(III); Co(NH3)5(HC2O4)

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

Al+++ sp NaClO4 28°C 0.30M U K1=1.74 1974NDa (23472) 287

\*\*\*\*\*

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  
-----

Al+++ EMF NaCl 25°C 0.0 C TIH K1=7.49 B2=12.62 1998RPb (24383) 288

Method: Pt/H2 electrode. Calculated from data for 0.10-1.0 m NaCl, 5-75 C.

DH(K1)=19 kJ mol<sup>-1</sup>, DS(K1)=208 J K<sup>-1</sup> mol<sup>-1</sup>; DH(B2)=29, DS(B2)=340.

-----

Al+++ sol none 35°C 0.00 C T B2=11.3 1995FYa (24384) 289  
 Method: atomic absorption and ion chromatography.  
 At 80 C, B2=14.5

-----  
 Al+++ gl KCl 25°C 0.10M C K1=6.711 B2=11.53 1993PTa (24385) 290  
 K3=2.58  
 \*K(AlL2)=-6.68

-----  
 Al+++ gl NaCl 37°C 0.15M C K1=6.264 B2=11.111 1982JCa (24386) 291  
 B3=13.3

-----  
 Al+++ gl NaClO4 25°C 1.00M U T 1974TGa (24387) 292  
 K(Al+HL)=3.58  
 K(Al+2HL)=5.99  
 K(Al+3HL)=8.58  
 At 35 C: K(Al+HL)=4.04, K(Al+2HL)=6.32, K(Al+3HL)=8.98

-----  
 Al+++ gl NaClO4 30°C 0.20M U K1=5.24 B2=9.40 1967AMa (24388) 293

-----  
 Al+++ gl oth/un 35°C ? U 1958DBb (24389) 294  
 K3=4.06  
 B3=15.84

\*\*\*\*\*  
 C3H6NO2Cl HL (8169)  
 3-Chloroalanine;

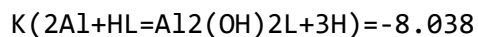
-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 25°C 0.10M C K1=4.05 B2= 6.05 1981TMe (24759) 295  
 Also data for the schiff based formed with pyridoxal.

\*\*\*\*\*  
 C3H6N2O3 H2L (7445)  
 2-(Hydroxyimino)propanohydroxamic acid; CH3C(:NOH)CONHOH

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaCl 37°C 0.15M C TI 2000GKb (24824) 296  
 B(AlHL)=17.370  
 B(AlH2L2)=34.461  
 B(AlH3L3)=50.130  
 B(AlH2L3)=43.968

B(AlHL3)=36.176, B3=26.940, B(Al3H-1L2)=27.322. At 25C, 0.1 M KNO3:  
 B(AlHL)=17.885, B(AlH2L2)=34.996, B3=26.471, B(AlH3L3)=51.036.  
 \*\*\*\*\*  
 C3H6O2 HL Propionic acid CAS 79-09-4 (35)  
 Propanoic acid; CH3.CH2.COOH

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaCl 25°C 0.60M C 1989MOa (24980) 297



-----  
Al+++ gl NaNO3 25°C 1.00M U K1=1.7 1975KIb (24981) 298  
-----

Al+++ gl NaClO4 25°C 1.00M U T K1=1.78 B2=3.4 1975TRa (24982) 299  
Values also at 35 C, 45 C

\*\*\*\*\*  
C3H6O3 HL CAS 81598-26-7 (2521)  
3-Hydroxypropanoic acid; HO.CH2.CH2.COOH  
-----

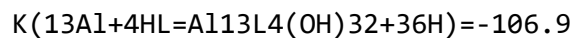
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----

Al+++ sp oth/un ? ? U K(Al+3HL)=7.38  
1972PKa (25259) 300  
-----

\*\*\*\*\*  
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  
-----

Al+++ gl NaCl 25°C 0.60M C 1990MOa (25390) 301  
K(2Al+HL=Al2L(OH)+3H)=-6.86  
K(2Al+2HL=Al2H-4L2+6H)=-16.79



Al+++ gl NaCl 25°C 0.60M C K1=2.36 B2=4.42 1986MSb (25391) 302  
K3=1.37  
K(AlL2=AlH-1L2+H)=-3.45  
-----

Al+++ gl NaClO4 25°C 1.00M U T K1=4.26 B2=4.8 1975TRa (25392) 303  
Values also at 35 C, 45 C

Al+++ sp oth/un ? ? U K(Al+HL)=4.46  
K(Al+2HL)=6.51  
1972PKa (25393) 304  
-----

Al+++ EMF NaNO3 20°C 0.20M U K1=2.38 B2=4.56 1971HUb (25394) 305  
B3=6.66  
-----

Al+++ sp oth/un ? ? U B3=3.79  
K(Al+L+2OH=AlOH(H-1L))=8.49  
K(Al+L+3OH=Al(OH)2(H-1L))=24.6  
1970PKd (25395) 306  
-----

Al+++ sp oth/un ? ? U K1=0.85 B2=2.92 1969PKc (25396) 307  
K(Al+2H-1L)=23.05  
-----

\*\*\*\*\*  
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
Al+++	gl	NaNO3	25°C	0.50M	C			B(Al2H-2L2)=7.23 B(AlH-3L)=-7.70	1989DJa (26137)	308
Al+++	gl	KNO3	35°C	0.10M	U	M		B(AlL(tripolyphosphate))=7.51	1980KHb (26138)	309
*****										
C3H7NO2		HL						(6927)		
N-Methylacetohydroxamic acid; CH3.CO.N(OH)CH3										
Al+++	gl	KCl	25°C	0.20M	C			K1=8.69 B2=16.21 B3=22.41	2000FEc (26620)	310
*****										
C3H7NO2		HL						(7502)		
Propanohydroxamic acid; C2H5CONHOH										
Al+++	gl	KCl	25°C	0.20M	C			K1=7.97 B2=15.59 B(AlH-1L2)=10.14 B(AlH-2L2)=0.3	2000FEc (26630)	311
*****										
C3H7NO2S		H2L						Cysteine CAS 52-90-4 (96)		
2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH										
Al+++	gl	NaClO4	25°C	0.10M	U	M		K1=6.43 B(AlL(citrate))=14.90 B(AlL(NTA))=18.89 K(Al+L+HPO4)=15.66	1975RMa (26751)	312
*****										
C3H7NO3		HL						Serine CAS 56-45-1 (49)		
2-Amino-3-hydroxypropanoic acid; H2N.CH(CH2.OH)COOH										
Al+++	gl	NaCl	37°C	0.15M	C			B(Al2H-2L)=0.198	2002DCa (27114)	313
Al+++	gl	KCl	25°C	0.20M	C			K1=5.66 B(AlH-1L)=0.62 B(Al2H-1L)=3.75	1997KSa (27115)	314
Al+++	oth	NaClO4	35°C	0.10M	C			K1=6.90 B2=12.20 B3=16.04	1986SGd (27116)	315

Method: electrophoresis

\*\*\*\*\*

C3H8NO5P H3L 3-Phosphono-Ala CAS 20263-06-3 (1509)  
2-Amino-3-phosphonatopropanoic acid; (H2O3P)CH2.CH(NH2).COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 1.00M C M K1=13.12 1985SMd (27350) 316  
K(AlL+H)=3.22

ternary complexes with pyridoxal-5'-phosphoric acid

\*\*\*\*\*

C3H8NO5P H3L CAS 23052-80-4 (1508)  
3-Amino-3-phosphonatopropanoic acid; (H2O3P)(NH2)CH.CH2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 1.00M C K1=10.93 1989MSb (27361) 317  
K(AlL+H)=4.19

\*\*\*\*\*  
C3H8NO5P H3L Glyphosate CAS 1071-83-6 (1617)  
N-(Phosphonomethyl)glycine; H2O3P.CH2.NH.CH2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 25°C 0.1M C K1=13.70 B2=22.05 1985MMa (27401) 318  
B(AlHL)=16.18  
B(AlHL2)=27.76

\*\*\*\*\*  
C3H8NO6P H3L Phosphoserine CAS 17885-08-4 (1865)  
Serine dihydrogenphosphate, O-Phosphoserine; NH2.CH(CH2.OPO3H2).COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C K1=11.48 1998KLb (27463) 319  
B(AlHL)=14.88  
B(AlH-1L)=5.44  
B(AlH-2L)=-2.63

-----  
Al+++ gl KCl 25°C 0.10M U K1=8.50 B2=12.76 1997ZTa (27464) 320

-----  
Al+++ gl KNO3 25°C 0.10M C K1=4.79 B2= 8.81 1981TMe (27465) 321  
B3=10.68

Also data for the schiff based formed with pyridoxal.

\*\*\*\*\*

C3H8N2O2 HL Ala-hydroxamic CAS 16707-85-0 (1582)  
2-Amino-N-hydroxypropanamide, Alanine hydroxamic acid; CH3.CH(NH2).CO.NH.OH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C B2=16.7 1989FSa (27576) 322

B(A1HL)=14.35  
 B(A12L2)=22.21  
 B(A12H-1L2)=17.59  
 B(A12H-2L2)=12.63

Also B(A12H-3L2)=5.85; B(A12H-4L2)=-2.44; B(A1H-1L2)=9.62; B(A1H-2L2)=-0.16.  
 \*\*\*\*\*

C3H8N2O2 HL (6666)  
 beta-Alaninehydroxamic acid; NH2.CH2.CH2.CO.NHOH

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

Al+++ gl KCl 25°C 0.20M C B2=19.87 1995FKa (27606) 323  
 B(A1HL)=16.72  
 B(A1H2L2)=32.07  
 B(A1HL2)=27.04  
 B(A1H-1L2)=10.74

B(A1H-2L2)=0.04.

\*\*\*\*\*

C3H8O10P2 H5L (6577)  
 2,3-Diphospho-D-glyceric acid; H2O3PO.CH2.CH(COOH)OPO3H2

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

Al+++ gl KCl 25°C 0.20M C B2=12.46 1990SKc (27802) 324  
 B(A1HL)=13.12  
 B(A1H2L2)=24.42  
 B(A1HL2)=18.78

\*\*\*\*\*

C3H9N3O2 HL CAS 471915-95-4 (8549)  
 2,3-Diamino-N-hydroxypropanamide;

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

Al+++ gl KCl 25°C 0.20M C K1=11.7 B2=17.60 2002ECa (27982) 325  
 B(A1HL2)=24.2

\*\*\*\*\*

C3H9O6P HL CAS 17181-54-3 (7537)  
 1,3-Dihydroxypropyl-2-phosphoric acid; HOCH2CH(OPO3H2)CH2OH

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

Al+++ gl NaClO4 25°C 0.10M C K1=5.30 B2=10.38 2003CCa (28029) 326  
 B(A12H-1L2)=11.72  
 B(A13H-5L2)=-3.42  
 B(A13H-6L2)=-10.03  
 B(A13H-7L2)=-18.05

Additional method: 31P nmr. B(A13H-1L3)=20.53. Fixed values:  
 B(A1HL)=8.5, B(A1H2L)=9.4, B(A1HL2)=14.0.

\*\*\*\*\*

C3H9O6P H2L CAS 57-03-4 (2984)

2,3-Dihydroxypropylphosphoric acid, Glycerol 1-phosphate; HO.CH2.CH(OH).CH2.OP03H2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl04 25°C 0.10M C K1=5.87 B2=10.31 2003CCa (28046) 327  
B(A12H-1L2)=11.80  
B(A13H-5L2)=-2.98  
B(A13H-6L2)=-9.51  
B(A13H-7L2)=-17.30

Additional method: 31P nmr. B(A13H-1L3)=20.63. Fixed values:  
B(A1HL)=8.5, B(A1H2L)=9.4, B(A1HL2)=14.0.

\*\*\*\*\*

C3H10NO3P H2L (1986)  
1,1-Dimethyl-1-aminomethylphosphonic acid; H2N.C(CH3)2.PO3H2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M U K1=11.42 B2=19.53 1969DMd (28073) 328  
K(A1+HL)=5.59  
K(A1+2HL)=9.61  
K(A1+3HL)=13.07

\*\*\*\*\*

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  
-----  
Al+++ ix R4N.X 25°C 1.00M U K1=1.85 B2=2.74 1972CSb (28635) 329  
Medium: NH4Cl04

-----  
Al+++ ix NaCl04 25°C 0.30M U K1=2.83 1969TWa (28636) 330  
\*\*\*\*\*  
C4H4O4 H2L Maleic acid CAS 110-16-7 (111)  
cis-Butenedioic acid; HOOC.CH:CH.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl04 25°C 0.04M M K1=5.48 B2= 8.78 1993MYa (29046) 331  
Medium: 0.01 M HCl04, 0.005 M Al(Cl04)3.

\*\*\*\*\*

C4H5N3O2 HL 6-Aminouricil CAS 873-83-6 (6213)  
4-Amino-2,6-dihoxypyrimidine;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl04 30°C 0.10M U K1=13.32 B2=25.27 1986JDa (29421) 332  
\*\*\*\*\*

C4H6O3 HL CAS 600-18-0 (5474)  
2-Ketobutanoic acid; CH3.CH2.CO.COOH

-----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C		K1=2.09 B2=3.65	1982KMc (29746)	333
*****									
C4H6O3		HL					Acetoacetic aci CAS 541-50-4 (5475)		
3-Ketobutanoic acid; CH3.CO.CH2.COOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C		K1=1.21 B2=1.84	1982KMc (29750)	334
*****									
C4H6O4		H2L					Succinic acid CAS 110-15-6 (112)		
1,4-Butanedioic acid; HOOC.CH2.CH2.COOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaCl	37°C	0.15M	C		K1=3.753	1998VBa (29928)	335
							B(AlHL)=7.154		
							B(Al2H-2L)=-1.103		
							B(Al3H-1L2)=9.114		
							B(Al3H-3L2)=1.385		
B(Al4H-6L3)=-4.44, B(Al8H-12L4)=-12.16									

Al+++	gl	KCl	25°C	0.20M	C		K1=3.63	1997KSa (29929)	336
							B(AlHL)=7.03		
							B(AlH-1L)=-0.53		
							B(AlH-2L)=-5.55		

Al+++	gl	NaCl	37°C	0.15M	C		K1=4.17	1990FDa (29930)	337
							B(AlHL)=7.18		
							B(AlH-2L)=-4.65		
							B(Al2H-3L)=-4.94		

Al+++	gl	NaCl	37°C	0.15M	U		K1=3.91	1987VBe (29931)	338
							B(Al2H-3L)=-5.23		
							B(Al3H-2L2)=5.34		

Al+++	gl	NaCl04	25°C	0.50M	U		K1=3.2	1984CDa (29932)	339
							B(AlHL)=6.60		
							B(AlH-1L)=4.2		

Al+++	gl	NaCl	37°C	0.15M	C			1982JCa (29933)	340
							B(AlH-1L)=-0.25		
							B(Al2H-1L)=2.88		
							B(AlH-2L)=-5.19		

Al+++	gl	NaCl04	25°C	1.00M	U			1974TGa (29934)	341
							K(Al+HL)=3.84		
							K(Al+2HL)=5.93		
							K(Al+3HL)=8.98		

At 35 C: K(Al+HL)=3.78, K(Al+2HL)=6.40, K(Al+3HL)=9.52

\*\*\*\*\*

C4H6O4 H2L Me-Malonic Acid CAS 516-15-2 (816)  
Methylpropanedioic acid; HOOC.CH(CH3).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.60M	C			1990MOb (30114)	342
							K(Al+H2L=AlL+2H)=-2.213 K(Al+2H2L=AlL2+4H)=-5.73 K(Al+3H2L=AlL3+6H)=-11.19		

\*\*\*\*\*

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaCl04	25°C	0.50M	U		K1=1.93 B(Al(OH))=12.34	1972NAb (30210)	343

\*\*\*\*\*

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.20M	C		K1=8.63 B(AlHL)=12.99 B(AlH-1L)=4.05	1997KSa (30318)	344

\*\*\*\*\*

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
Al+++	gl	NaCl	37°C	0.15M	C		K1=4.519 B(AlHL)=7.032 B(AlHL2)=10.981 B(AlH-1L)=1.268 B(Al2H-2L)=0.564 B(Al2H-3L)=-3.054, B(Al2H-3L2)=1.779, B(Al2H-4L2)=-4.462, B(Al2H-1L3)=12.789, B(Al3H-4L4)=10.132, B(Al4H-5L4)=10.537.	2001VBa (30578)	345

Al+++	sp	oth/un	23°C	0.10M	U		Keff=11.6	1994KGa (30579)	346
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Method: spectrophotometric using pyrocatechol violet. Tris buffer adjusted to a pH=5.34 with HCl

Al+++	gl	NaCl	37°C	0.15M	C		K1=4.37 B2=8.17 B(AlH-1L2)=4.11	1990FDa (30580)	347
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Al+++ gl NaNO3 25°C 0.50M M M 1989MAa (30581) 348

B(-3,1,1)=-10.5  
K(2AlH-2L=Al2H-4L2)=-22.2

B(p,q,r): pH+qM+rH2L. K(UO2+Al+2H2L=UO2AlH-4L2+8H)=-8.06

Al+++ gl NaCl 37°C 0.15M U K1=4.60 B2= 7.62 1987VBe (30582) 349

B(AlHL)=6.87  
B(AlHL2)=11.31  
B(AlH-1L2)=4.31  
B(Al2H-2L2)=5.59

B(Al2H-3L2)=2.50

Al+++ gl NaClO4 25°C 0.01M U 1976MPb (30583) 350

K(Al+H2L=AlH-1L+3H)=-5.39  
K(AlH-2L+H)=4.72  
K(AlH-3L+H)=7.60

Al+++ EMF KNO3 20°C 0.20M U K1=5.34 B2=9.32 1969Pvc (30584) 351

Al+++ sp NaClO4 29°C 1.0M U K1=3.32 1965MNa (30585) 352

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

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

Al+++ gl NaClO4 25°C 0.10M U TIH K1=3.43 B2=6.42 1979SDc (30851) 353

Al+++ gl NaClO4 25°C 0.50M U K1=3.16 B2=5.25 1972NAd (30852) 354

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

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

Al+++ gl NaNO3 25°C 0.50M M M 1989MAa (31009) 355

B(-4,1,1)=-7.8  
K(2AlH-2L=Al2H-4L2)=-18.5

B(p,q,r): pH+qM+rH2L. K(UO2+Al+2H2L=UO2AlH-4L2+8H)=>-12

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

Al+++ gl NaCl 37°C 0.15M C K1=3.788 2000DDb (31185) 356

B(AlH-1L)=1.165  
B(Al2H-1L2)=7.976  
B(Al2H-2L2)=5.347  
B(Al2H-3L2)=1.009

B(Al2H-4L2)=-5.101

-----  
Al+++ sp oth/un 23°C 0.10M U 1994KGa (31186) 357  
Keff=11.7

Method: spectrophotometric using pyrocatechol violet. Tris buffer adjusted to a pH=6.00 with HCl

-----  
Al+++ gl NaCl 25°C 0.60M C 1990M0d (31187) 358  
B(1,-2,1)=-3.44  
B(2,-5,2)=-6.30  
B(2,-6,2)=-8.91  
B(2,-7,2)=-13.12

B(2,-8,2)=-18.95. B(p,q,r): pAl+qH+rH2L=AlpHq(H2L)r

-----  
Al+++ gl KNO3 25°C 0.10M C 1984MMb (31188) 359  
B2=7.65  
B(AlH-1L)=1.18  
\*K(AlH-1L)=-5.15  
\*K(AlL2)=-3.72  
K(AlH-3L2+2H)=12.67

-----  
Al+++ gl NaClO4 25°C 0.10M U 1972MRc (31189) 360  
Meso Tartaric acid: K1=5.32, K2=4.45.

-----  
Al+++ oth oth/un 20°C 0.0 U 1967FRa (31190) 361  
K1=6.35  
K(Al+HL)=3.43  
K(AlOH+L=AlH-1L)=9.05  
K(Al(OH)2+L=AlH-2L)=10.92  
K(Al(OH)3+L=AlH-2LOH)=8.37

Method: optical rotation. K(Al(OH)4+L=Al(H-2L)(OH)2)=8.89, B(Al2L)=2, K(Al+AlH-1L)=3, K(Al+H-2L)=4, K(AlL+H2L)=0.66, K(AlH-1L+H2L)=1.12 plus others

-----  
Al+++ oth oth/un 20°C ? U 1967PTa (31191) 362  
K(AlOH+L)=1.8

Method: refraction

-----  
Al+++ dis NaClO4 20°C 0.10M U 1963STc (31192) 363  
\*\*\*\*\*  
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

-----  
Al+++ gl KCl 25°C 0.20M C 1997KSa (31811) 364  
K1=7.87  
B(AlHL)=11.76  
B(AlH-1L)=3.30  
B(AlH-2L)=-2.32

-----  
Al+++ gl NaClO4 25°C 0.50M U 1984CDa (31812) 365  
K(Al+HL)=2.16  
K(Al(OH)+HL)=3.03



-----  
Al+++ gl KNO3 35°C 0.10M U M 1980KHb (31813) 366  
B(AlHL(tripolyphosphate))=8.29  
-----

Al+++ gl NaClO4 25°C 0.10M U K1=16.29 B2=30.69 1972SSe (31814) 367  
K3=11.50  
-----

\*\*\*\*\*  
C4H7N04 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  
-----

Al+++ sp oth/un 25°C 0.10M U K1=8.10 1997YSa (32195) 368  
-----

Al+++ gl NaClO4 25°C 0.10M U T K1=8.62 B2=16.12 1981DSa (32196) 369  
At 35 C: K1=8.42, B2=16.62; 45 C: 8.28, 15.49  
-----

Al+++ gl NaClO4 25°C 0.50M U K1=8.10 B2=15.07 1971LNB (32197) 370  
-----

\*\*\*\*\*  
C4H7N05 H2L (1234)  
N-Hydroxyiminodiethanoic acid; HO.N(CH2.COOH)2  
-----

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

Al+++ gl KNO3 25°C 0.10M C K1=5.1 1987AKa (32426) 371  
-----

\*\*\*\*\*  
C4H8N02Cl HL (8170)  
3-Chloro-2-aminobutanoic acid;  
-----

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

Al+++ gl KNO3 25°C 0.10M C K1=4.13 B2= 6.33 1981TMe (32468) 372  
Also data for the schiff based formed with pyridoxal.  
-----

\*\*\*\*\*  
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  
-----

Al+++ gl KCl 25°C 0.20M C K1=5.50 1997KSa (32681) 373  
B(AlH-1L)=1.31  
-----

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

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

Al+++ gl KNO3 35°C 0.10M U M 1980KHb (33017) 374  
B(AlHL(tripolyphosphate))=4.18  
-----

\*\*\*\*\*

C4H8N2O4 H2L (6369)  
N(1)-Hydroxyasparagine, aspartyl-beta-hydroxamic acid; H2N.CH(CH2.CO.NHOH).COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C B2=19.26 1995FKa (33132) 375  
B(AlHL)=16.27  
B(AlH2L2)=31.76  
B(AlHL2)=26.80  
B(AlH-1L2)=10.36

\*\*\*\*\*

C4H8O2 HL CAS 107-92-6 (1118)  
n-Butanoic acid; CH3.CH2.CH2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaNO3 25°C 1.00M U K1=1.6 1975KIb (33328) 376

\*\*\*\*\*

C4H8O2S HL CAS 627-04-3 (3007)  
S-Ethylthioethanoic acid; CH3.CH2.S.CH2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl diox/w 30°C 50% U K1=3.45 1956IFa (33403) 377

\*\*\*\*\*

C4H9NO2S HL Methylcysteine CAS 1187-84-4 (84)  
2-Amino-3-methylmercaptopropanoic acid; H2N.CH(CH2.S.CH3)COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ dis NaClO4 35°C 0.10M U M K1=7.68 1995TKa (34094) 378  
Method: Paper electrophoresis; Ternary complexes with NTA.

\*\*\*\*\*

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  
-----  
Al+++ gl NaCl 37°C 0.15M C 2002DCa (34287) 379  
B(Al2H-2L)=-0.177

-----  
Al+++ gl KCl 25°C 0.20M C K1=5.51 1997Ksa (34288) 380  
B(AlH-1L)=0.94

-----  
Al+++ oth NaClO4 35°C 0.10M C K1=7.94 B2=13.04 1986SGd (34289) 381  
B3=18.94

Method: electrophoresis

-----  
Al+++ gl KNO3 35°C 0.10M U M 1980KHb (34290) 382  
B(AlL(tripolyphosphate))=7.55

\*\*\*\*\*  
 C4H10O L Ether CAS 60-29-7 (3573)  
 Diethyl ether (ethyl ether, ethoxyethane); C2H5.O.C2H5

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ oth oth/un 20°C 0.07M U K1=1.34 1965PBc (34651) 383  
 Method: mass spectrograph. Medium: AlI3

\*\*\*\*\*  
 C4H11N3O2 HL CAS 471915-94-3 (8550)  
 2,4-Diamino-N-hydroxybutanamide;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.20M C B2=19.81 2002ECa (35175) 384  
 B(AlHL)=17.3  
 B(AlHL2)=27.2  
 B(AlH2L2)=34.0

\*\*\*\*\*  
 C5H2O2F6 HL HFA CAS 1522-22-1 (195)  
 1,1,1,5,5,5-Hexafluoropentane-2,4-dione; F3C.CO.CH2.CO.CF3

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ nmr non-aq 25°C 100% U H 1964PCa (35920) 385  
 Method:NMR, medium:CHCl3. DG(trans-All3=cis-All3)=3.8 kJ mol-1,DH=1.0,DS=-8

\*\*\*\*\*  
 C5H5NO2 HL CAS 13161-30-3 (5582)  
 1-Hydroxypyridin-2(1H)-one, 2-Hydroxypyridine 1-oxide;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.20M C B2=12.5 2000FEc (36751) 386  
 -----  
 Al+++ gl KCl 25°C 0.10M U K1=8.16 B2=15.54 1993LMc (36752) 387  
 K3=6.05

\*\*\*\*\*  
 C5H5NO2 HL CAS 16867-04-2 (2316)  
 2,3-Dihydroxypyridine, 3-Hydroxypyridin-2(1H)-one; C5H3N(OH)2

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaCl 25°C 0.60M U T K1=8.59 B2=16.34 1999DBa (36779) 388  
 B3=23.11  
 B(AlH-1L3)=13.85  
 At 37 C, K1=8.19, B2=16.03, B3=21.77, B(AlH-1L3)=13.0

-----  
 Al+++ kin NaCl04 34°C 0.10M C 1979BMb (36780) 389  
 K(Al+H2L=All+2H)=-1.85  
 Method: stopped-flow.

\*\*\*\*\*  
 C5H5NO3 H2L CAS 99110-85-7 (2195)  
 1,4-Dihydroxy-2-pyridinone;  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			B2=21.20 B3=25.16 B(AlHL)=16.5 B(AlHL2)=27.22 B(AlH2L2)=32.64	1992CMc (36841)	390

\*\*\*\*\*  
 C5H6O5 H2L CAS 642-93-3 (5476)  
 3-Methyl-2-oxobutanedioic acid HOOC.CO.CH(CH3).COOH  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			K1=6.16 B2=10.80	1982KMc (37479)	391

\*\*\*\*\*  
 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
Al+++	dis	NaClO4	25°C	0.10M	C			K1=8.7	1986SNa (37910)	392

Method: rate of distribution of volatile ligand between aqueous phase and inert gas phase. K(H+L)=9.17 assumed.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	oth	NaClO4	25°C	0.10M	C	I	T	K1=8.2 B2=15.7 B3=21.4	1982SLc (37911)	393

IUPAC evaluation. I=0 corr.: K1=8.6, B2=16.5, B3=22.3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	oth/un	30°C	0.0	U			K1=8.6 B2=16.5 K3=5.8	1955IFa (37912)	394

\*\*\*\*\*  
 C5H9NO2 HL Proline CAS 147-85-3 (44)  
 Pyrrolidine-2-carboxylic acid; C4H8N.COOH  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KNO3	35°C	0.10M	U	M		B(AlL(tripolyphosphate))=8.63	1980KHb (38601)	395

\*\*\*\*\*  
 C5H9NO3 HL Hydroxyproline CAS 51-35-4 (416)  
 4-Hydroxy-2-pyrrolidinedicarboxylic acid; C4H7N(OH)(COOH)  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KNO3	35°C	0.10M	U	M		B(AlL(tripolyphosphate))=7.83	1980KHb (38719)	396

\*\*\*\*\*

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  
-----

Al+++ gl NaCl 37°C 0.15M C 2003DBa (39059) 397  
B(AlH2L)=15.015  
B(Al2H-1L)=6.680  
B(AlHL2)=18.850  
B(AlH2L2)=23.425

B(Al3H-4L2)=3.810, B(Al3H-4L3)=11.220.

-----  
Al+++ gl KCl 25°C 0.20M C K1=7.29 1997KSa (39060) 398  
B(AlHL)=10.88  
B(AlH-1L)=2.55  
B(Al2L)=9.46

-----  
Al+++ gl NaCl04 25°C 0.50M U 1984CDa (39061) 399  
K(Al+HL)=2.30  
K(Al(OH)+HL)=3.50

-----  
Al+++ gl KNO3 35°C 0.10M U M 1980KHb (39062) 400  
B(AlHL(tripolyphosphate))=7.97

-----  
Al+++ gl NaCl04 25°C 0.10M U K1=15.12 B2=29.40 1972SSe (39063) 401  
K3=9.20

\*\*\*\*\*

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

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

Al+++ gl NaCl04 25°C 0.50M C K1=7.55 1984NAa (39238) 402

-----  
C5H10NO7P H4L PMIDA CAS 5994-61-6 (2433)  
N-(Phosphonomethyl)iminodiethanoic acid; H2O3P.CH2.N(CH2.COOH)2

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

Al+++ gl KCl 25°C 0.10M U K1=14.7 1980VRa (39666) 403  
K(Al+HL)=7.3

\*\*\*\*\*

C5H10N2O3 HL Glutamine CAS 56-85-9 (18)  
2-Aminopentanedioic acid 5-amide; H2N.CH(CH2.CH2.CO.NH2)COOH

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

Al+++ gl KCl 25°C 0.20M C K1=5.61 1997KSa (39811) 404  
B(AlH-1L)=1.33

\*\*\*\*\*  
 C5H10N2O4 HL CAS 1955-67-5 (6736)  
 2-Aminopentanoic-5-hydroxamic acid; HOOC.CH(NH2).CH2.CH2.CO.NOH

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.20M C B2=19.89 1995FKa (40077) 405  
 B(AlHL)=16.65  
 B(AlH2L2)=32.79  
 B(AlHL2)=27.62  
 B(AlH-1L2)=9.9

B(AlH-2L2)=1.10

\*\*\*\*\*  
 C5H10O4 HL (7178)  
 2,5-Dihydroxypentanoic acid; HOCH2CH2CH2CHOHC00H

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaCl 25°C 0.10M C K1=2.04 1994BHa (40324) 406  
 \*K(AlL)=-3.14  
 \*K(AlH-1L)=-2.25

\*\*\*\*\*  
 C5H11NO2 HL Valine CAS 72-18-4 (43)  
 2-Amino-3-methylbutanoic acid; H2N.CH(CH(CH3)2)C00H

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 35°C 0.10M U M 1980KHb (40687) 407  
 B(AlL(tripolyphosphate))=7.97

\*\*\*\*\*  
 C5H11NO2S HL Methionine CAS 63-68-3 (42)  
 2-Amino-4-(methylthio)butanoic acid; H2N.CH(CH2.CH2.S.CH3)C00H

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ oth oth/un 25°C 0.10M C K1=7.00 B2=11.50 1998TEb (41077) 408  
 Method: electrophoresis. Medium: 0.1 M HClO4.

\*\*\*\*\*  
 C5H11NO2S H2L Penicillamine CAS 52-66-4 (350)  
 DL-2-Amino-3-mercapto-3-methylbutanoic acid; (CH3)2C(SH)CH(NH2)C00H

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ oth NaClO4 35°C 0.10M C K1=11.50 B2=15.05 1996TKb (41252) 409  
 Method: paper electrophoresis.

\*\*\*\*\*  
 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

-----  
Al+++ gl KCl 25°C 0.20M C K1=5.63 1996AKa (41420) 410  
B(AlH-1L)=1.69  
B(AlH-2L)=-4.83

\*\*\*\*\*  
C6H3N3O7 HL Picric acid CAS 88-89-1 (593)  
2,4,6-Trinitrophenol; HO.C6H2(NO2)3  
-----

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

Al+++ sp oth/un 21°C 0.40M U K1=1.05 1955BKa (42091) 411  
B3=3.12

\*\*\*\*\*  
C6H4N2O5 HL CAS 50-28-5 (505)  
2,4-Dinitrophenol; HO.C6H3(NO2)2  
-----

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

Al+++ sp oth/un 21°C 0.40M U K1=0.89 1955BKa (42223) 412  
Medium:0.2-0.7(some EtOH)

\*\*\*\*\*  
C6H4N2O6 H2L CAS 7659-29-2 (2694)  
1,2-Dihydroxy-3,5-dinitrobenzene; (HO)2.C6H2(NO2)2  
-----

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

Al+++ gl KCl 25°C 0.10M C B2=21.80 2004GAa (42263) 413  
B3=31.68

\*\*\*\*\*  
C6H5NCl2 L Dichloroaniline CAS 554-00-7 (761)  
2,4-Dichloroaniline; H2N.C6H3(Cl)2  
-----

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

Al+++ sp diox/w 25°C 100% U K(AlCl3+L)=2.14 1976BSa (42347) 414

\*\*\*\*\*  
C6H5NCl2 L Dichloroaniline CAS 95-76-1 (759)  
3,4-Dichloroaniline; H2N.C6H3(Cl)2  
-----

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

Al+++ sp diox/w 25°C 100% U K(AlCl3+L)=2.83 1976BSa (42352) 415

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

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

Al+++ nmr NaCl 25°C 1.5M C K1=4.11 B2= 7.90 2000LKb (42494) 416  
Method: 27Al nmr.

-----  
Al+++ gl NaCl 37°C 0.15M C K1=4.35 B2=8.48 1990FDa (42495) 417  
B(AlH-1L2)=4.15  
B(AlH-2L)=-3.19

-----  
Al+++ gl KNO3 25°C 0.15M U K1=4.487 B2=8.419 1988JJa (42496) 418  
B(Al(OH)L2)=17.589  
B(Al(OH)2L)=21.73

-----  
Al+++ gl NaClO4 25°C 0.50M C K1=4.62 B2=8.60 1986MNb (42497) 419  
B3=12.3

-----  
Al+++ gl KNO3 25°C 0.15M U K1=4.497 B2= 8.27 1985JJa (42498) 420  
B(AlH-1L2)=17.668  
B(Al2H-3L2)=39.27

\*\*\*\*\*

C6H5NO3 H2L CAS 609-71-2 (5910)  
2-Hydroxypyridine-3-carboxylic acid;

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

-----  
Al+++ gl NaCl 25°C 0.60M C K1=12.48 1999MTb (42722) 421  
B(AlHL)=18.02  
B(AlH2L2)=34.73  
B(AlH3L3)=49.92  
B(AlH2L3)=43.0

Confirmed by H-nmr. By spectrophotometry: B(AlHL)=17.96

\*\*\*\*\*

C6H5NO3 H2L CAS 874-24-8 (4356)  
3-Hydroxypyridine-2-carboxylic acid; C5H3N.(OH)(COOH)

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

-----  
Al+++ gl NaCl 25°C 0.60M C K1=11.89 B2=21.13 1999MTb (42747) 422  
B(AlHL)=16.91  
B(AlH2L2)=32.62  
B(AlHL2)=27.2  
B(AlH3L3)=46.91

B(AlH2L3)=41.2, B(AlHL3)=34.7, B3=27.04. H-nmr also used.

By spectrophotometry: B(AlHL)=16.89

\*\*\*\*\*

C6H5NO3 H2L CAS 10128-71-9 (8910)  
3-Hydroxypyridine-4-carboxylic acid;

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

-----  
Al+++ gl NaCl 25°C 0.60M C K1=10.84 B2=19.50 2002DYa (42758) 423  
B3=26.09



B(A1HL)=15.97  
B(A1H2L2)=30.78  
B(A1HL2)=25.47

B(A1H3L3)=44.05, B(A1H2L3)=38.69, B(A1HL3)=32.67.

\*\*\*\*\*

C6H5NO3 H2L CAS 609-70-1 (8911)

4-Hydroxypyridine-3-carboxylic acid;

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

A1+++ gl NaCl 25°C 0.60M C B2=20.5 2002DYa (42775) 424

B3=25.76

B(A1HL)=18.19

B(A1H2L2)=35.15

B(A1HL2)=28.7

B(A1H3L3)=50.76, B(A1H2L3)=42.92, B(A1HL3)=34.77.

\*\*\*\*\*

C6H5NO4 H2L 3-Nitrocatechol CAS 6665-98-1 (2685)

1,2-Dihydroxy-3-nitrobenzene; O2N.C6H3(OH)2

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

A1+++ gl KCl 25°C 0.10M M K1=14.17 B2=26.30 1986HAb (42855) 425

B3=35.81

\*\*\*\*\*

C6H5NO4 H2L 4-Nitrocatechol CAS 3316-09-4 (890)

1,2-Dihydroxy-4-nitrobenzene; O2N.C6H3(OH)2

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

A1+++ gl KCl 25°C 0.10M C K1=13.89 B2=26.33 2004GAa (42911) 426

B3=37.08

A1+++ gl KCl 25°C 0.10M C K1=13.75 B2=25.44 1997DSa (42912) 427

B3=34.38

B(A1H-1L2)=17.93

A1+++ gl KCl 25°C 0.10M M K1=13.74 B2=25.39 1984HAd (42913) 428

B3=34.31

\*\*\*\*\*

C6H5N2O2Cl L CAS 635-22-3 (763)

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

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

A1+++ sp diox/w 25°C 100% U 1976BSa (42977) 429

K(A1Cl3+L)=1.67

\*\*\*\*\*

C6H6NCl L o-Chloroaniline CAS 95-51-2 (3088)

2-Chloroaniline (1-amino-2-chlorobenzene); Cl.C6H4.NH2

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     sol NaNO3  55°C 0.10M C T      K1=<-2.37      1998YFa (43199) 430
At 80 C, K1<-2.50.
*****
C6H6NO6P          H2L                      CAS 330-13-2 (5865)
4-Nitrophenylphosphoric acid; NO2.C6H4.O.PO.(OH)2
-----

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     gl  KCl    25°C 0.20M C          K1=4.80        1996AKa (43246) 431
                                B(AlH-1L)=1.19
                                B(AlH-2L)=-5.5
*****
C6H6N2O2          HL                      (8281)
3-Hydroxy-2-amidocarboxypyridine, Hydroxypicolinamide;
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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     gl  KNO3   25°C 0.10M C          K1=7.54  B2=13.79  1990ARa (43373) 432
*****
C6H6N2O2          L    m-Nitroaniline  CAS 99-09-2 (464)
3-Nitroaminobenzene; H2N.C6H4.NO2
-----

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     sp  diox/w 25°C 100% U          K(AlCl3+L)=2.35  1976BSa (43387) 433
*****
C6H6N2O2          L    p-Nitroaniline  CAS 100-01-6 (465)
4-Nitroaminobenzene; H2N.C6H4.NO2
-----

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     sp  diox/w 25°C 100% U          K(AlCl3+L)=1.52  1976BSa (43404) 434
*****
C6H6N2O3          H2L                      CAS 2504-83-8 (1141)
Imidazolylpyruvic acid; C3H3N2.CH2.CO.COOH
-----

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-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     gl  KCl    25°C 0.10M U          K1=9.0   B2=16.10  1975SDa (43451) 435
*****
C6H6O2           H2L    Catechol          CAS 120-80-9 (534)
1,2-Dihydroxybenzene, pyrocatechol; HO.C6H4.OH
-----

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

```

Al+++ gl KCl 25°C 0.20M C M K1=16.20 B2=29.26 1993KAa (43715) 436  
 B3=37.95  
 B(A12H-2L2)=24.05  
 B(A1LA)=26.92, B(A1LA2)=35.2, B(A1L2A)=37.12. H2A=salicylic acid

-----  
 Al+++ sp KCl 25°C 0.10M C K1=16.22 1989SMa (43716) 437  
 -----

Al+++ gl KCl 25°C 0.10M C K1=16.89 B2=30.55 1985KPa (43717) 438  
 K3=8.98  
 \*K(A1L)=-6.07  
 \*K(A1L2)=-8.10

-----  
 Al+++ gl KNO3 25°C 0.10M C 1984MMb (43718) 439  
 K(A1+H2L=A1L+2H)=-6.08  
 K(A1L+H2L=A1L2+2H)=-9.18  
 K(A1L2+H2L=A1L3+2H)=-13.52  
 K(A1L2+H)=6.03

-----  
 Al+++ gl NaCl 25°C 0.60M U 19830Sa (43719) 440  
 B(-2,1,1)=-6.337  
 B(-4,1,2)=-15.44  
 B(-6,1,3)=-28.62  
 B(-5,1,2)=-23.45  
 B(-9,3,3)=-29.91. B(p,q,r):pH+qAl+r(H2L)

-----  
 Al+++ gl KNO3 25°C 0.20M U K1=15.31 B2=27.67 1982H0b (43720) 441  
 K3=7.74

-----  
 Al+++ gl KCl 25°C 0.20M U K1=16.27 B2=29.75 1970G0a (43721) 442  
 K3=9.00

-----  
 Al+++ gl KNO3 20°C 0.10M U K1=16.9 B2=30.50 1969HBa (43722) 443  
 K3=8.9

-----  
 Al+++ gl KNO3 ? 0.20M U K1=16.56 B2=32.20 1964DMa (43723) 444  
 K3=13.65

\*\*\*\*\*  
 C6H6O3 H3L Pyrogallol CAS 87-66-1 (696)  
 1,2,3-Trihydroxybenzene; C6H3(OH)3

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

-----  
 Al+++ gl KCl 22°C 0.20M U K1=24.50 B2=44.55 1970G0b (43946) 445  
 K3=13.40

-----  
 Al+++ gl KNO3 ? 0.20M U 1967DMa (43947) 446  
 K(A1+HL)=14.3  
 K(A1HL+HL)=13.5  
 K(A1(HL)2+HL)=11.9

\*\*\*\*\*

C6H6O3 HL Isomaltol CAS 3420-59-5 (5885)  
1-(3-Hydroxy-2-furanyl)ethanone;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl 25°C 0.15M C K1=5.66 B2=10.42 1989LCa (44031) 447  
K3=4.03

\*\*\*\*\*  
C6H6O3 HL Maltol CAS 118-71-8 (2442)  
3-Hydroxy-2-methyl-4H-pyran-4-one;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ nmr NaCl 25°C 1.50M C T H 2002YPa (44073) 448  
Method: 27Al and 170 nmr measurements at 0-65 C.  
DH(Al+HL=AlL+H)=22 kJ mol<sup>-1</sup>; DH(AlL+HL=AlL2+H)=28 kJ mol<sup>-1</sup>.  
-----  
Al+++ gl NaCl 25°C 0.15M C K1=8.44 B2=15.54 1991JSb (44074) 449  
B3=22.16

-----  
Al+++ gl NaCl 25°C 0.60M C 1988HOa (44075) 450  
B(-1,1,1)=-0.130  
B(-2,1,2)=-0.956  
B(-3,1,3)=-2.669  
B(-4,2,2)=-7.203

B(p,q,r): pH+qAl+r(HL)=HpAlq(HL)r

-----  
Al+++ gl KNO3 25°C 0.10M U K1=7.7 B2=15.25 1969CBb (44076) 451  
K3=6.65

\*\*\*\*\*  
C6H6O4 HL Kojic acid CAS 501-30-4 (1800)  
5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl 25°C 0.60M C 1988HOa (44194) 452  
B(-1,1,1)=-0.371  
B(-2,1,2)=-1.499  
B(-3,1,3)=-3.564  
B(-4,2,2)=-7.656

B(p,q,r): pH+qAl+r(HL)=HpAlq(HL)r

-----  
Al+++ sp KCl 25°C 0.10M C K1=7.66 1987PEa (44195) 453  
-----  
Al+++ EMF KCl 21°C 0.10M U K1=7.7 B2=14.2 1959OKb (44196) 454  
B3=19.5

Method: H electrode

\*\*\*\*\*  
C6H6O5S H3L CAS 7134-09-0 (3687)  
3,4-Dihydroxybenzenesulfonic acid; (HO)2.C6H3.SO3H

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 20°C 0.10M U K1=16.6 B2=29.90 1969HBb (44280) 455  
K3=9.3

\*\*\*\*\*  
C6H6O8S2 H4L Tiron CAS 149-45-1 (104)  
4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)2.C6H2(SO3H)2  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C M K1=15.75 B2=29.10 2002FCa (44397) 456  
B3=38.97  
B(A1AL)=22.48  
B(A1A2L)=34.27

A is acetohydroxamic acid.

-----  
Al+++ gl KNO3 25°C 0.10M C 1988YYa (44398) 457  
K(A1+H2L=A1L+2H)=-3.11  
K(A1L+H2L=A1L2+2H)=-6.26  
K(A1L2+H2L=A1L3+2H)=-9.9

-----  
Al+++ gl KCl 30°C 0.10M U TIH K1=15.48 B2=30.09 1980BDe (44399) 458  
K3=12.72

Data for I=0.20 and 0.30 M. Data at 40 C. DH and DS values.  
At I=0, K1=16.00, K2=15.18, K3=13.00.

-----  
Al+++ kin NaClO4 34°C 0.10M C 1979BMb (44400) 459  
K(A1+H2L=A1L+2H)=-2.62

Method: stopped-flow.

-----  
Al+++ gl KNO3 20°C 0.10M U K1=16.7 B2=30.30 1969HBa (44401) 460  
K3=9.7

-----  
Al+++ gl NaNO3 25°C 0.20M U K1=16.65 B2=30.25 1968ASa (44402) 461

-----  
Al+++ con KNO3 ? 0.10M U K1=16.81 1965DMa (44403) 462  
By glass electrode: K1=16.79, K2=16.58, K3=14.34

-----  
Al+++ gl oth/un 25°C 0.0 U K1=19.02 B2=31.10 1957NAd (44404) 463  
K3=2.4

\*\*\*\*\*  
C6H7N L Aniline CAS 62-53-3 (583)  
Aminobenzene, aniline; C6H5.NH2  
-----

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

Al+++ sol NaNO3 80°C 0.10M C K1=<-0.93 1998YFa (44867) 464

\*\*\*\*\*  
C6H7NO2 HL CAS 19365-01-6 (6771)

1-Methyl-3-hydroxy-2-pyridinone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			K1=9.41 B2=17.79 B3=25.10	1992CMc (45023)	465

\*\*\*\*\*  
 C6H7NO2 HL CAS 17184-19-9 (5888)  
 3-Hydroxy-2-methylpyridin-4(1H)-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.15M	C	I		K1=11.87 B2=22.54 B3=32.05	1989CNa (45047)	466

Data also at I=0.6 M(NaCl): K1=11.43, B2=21.73, B3=30.41  
 \*\*\*\*\*  
 C6H7O4P H2L CAS 701-64-4 (5866)  
 Phenyl phosphoric acid; C6H5O.P(O)(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.20M	C			K1=5.29 B(AlH-1L)=1.51 B(AlH-2L)=-4.5	1996AKa (45230)	467

\*\*\*\*\*  
 C6H8O6 H3L Tricarballic CAS 99-14-9 (1620)  
 1,2,3-Propanetricarboxylic acid; HOOC.CH2.CH(COOH).CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	37°C	0.15M	C			K1=5.44 B(AlHL)=8.85 B(AlH-1L)=1.88	1982JAc (45561)	468

\*\*\*\*\*  
 C6H8O6 H2L Ascorbic acid CAS 50-81-7 (285)  
 Ascorbic acid (Vitamin C);

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.60M	C			B(-1,1,1)=-2.59 B(-6,3,1)=-18.38 B(-9,3,4)=-24.19	19920Na (45624)	469

B(p,q,r); pH+qAl+rHL=Hp(Al)q(HL)r  
 Note: L-ascorbic acid is here defined as HL  
 \*\*\*\*\*  
 C6H8O7 H3L Isocitric acid CAS 1637-73-6 (2527)  
 2-Hydroxy-3-carboxypentanedioic acid; HOOC.CH(OH).CH(COOH).CH2.COOH

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

-----  
Al+++ gl KCl 25°C 0.10M C K1=6.905 1995PTa (45731) 470  
B(AlHL)=9.55  
B(AlH-1L)=3.06  
B(Al2H-3L2)=4.08

An alternative model gave K1=6.96, B(AlHL)=9.37, B(AlH-1L)=2.92,  
B(Al3H-4L3)=10.36.

\*\*\*\*\*

C6H8O7 H3L Citric acid CAS 77-92-9 (95)  
2-Hydroxypropane-1,2,3-tricarboxylic acid; H00CCH2.CH(OH)(COOH).CH2COOH

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

-----  
Al+++ gl KCl 25°C 0.20M C K1=7.85 B2=12.73 2001LBa (46012) 471  
B(AlHL)=10.18  
B(AlH-1L)=4.27  
B(AlH-2L)=-1.77  
B(AlH-1L2)=7.81

B(AlH-2L2)=0.4, B(Al3H-4L3)=16.34.

-----  
Al+++ cal oth/un 25°C 0.04M C H 1997WDa (46013) 472  
DH(Al+L=Al(OH)L+H)=41.6 kJ mol<sup>-1</sup>; DH(Al(OH)L+3OH=Al(OH)4+L)=-29.2 kJ mol<sup>-1</sup>  
DH(Al+4OH=Al(OH)4)=-43.4 kJ mol<sup>-1</sup>.

-----  
Al+++ sp oth/un 23°C 0.10M U Keff=9.4 1994KGa (46014) 473

Method: spectrophotometric using pyrocatechol violet. Tris buffer adjusted  
to a pH=5.34 with HCl

-----  
Al+++ gl NaCl 37°C 0.15M C K1=8.34 B2=13.56 1990FDa (46015) 474  
B(AlHL)=10.78  
B(AlH-1L)=5.30  
B(AlH-1L2)=7.99  
B(AlH-2L)=-0.59

-----  
Al+++ gl NaNO3 25°C 0.50M M M 1989MAa (46016) 475  
K(Al+H3L=AlH-1L+4H)=-6.6  
K(2AlH-1L=Al2H-2L2)=-14.8

K(UO2+Al+2H4L=AlUO2H-2L2+8H)=-8.21

-----  
Al+++ gl NaCl 37°C 0.15M C K1=8.246 B2=13.068 1989VBa (46017) 476  
B(AlHL)=10.502  
B(AlH-2L)=6.777  
B(AlH-2L2)=-0.209  
B(Al2H-2L2)=12.694

-----  
Al+++ gl NaCl 25°C 0.60M C 19880Hb (46018) 477  
B(-4,1,1)=-8.48  
B(-5,1,1)=-14.71  
B(-16,3,3)=-47.11

$$B(p,q,r)=pH+qAl+rH3L=HqAlq(H3L)r$$

---

Al+++      gl   NaCl   37°C 0.15M U      K1=8.34   B2=13.69   1987FDb (46019) 478  
B(AlHL)=10.79  
B(AlH-1L)=5.29  
B(AlH-2L)=-0.53  
B(AlH-1L2)=8.21

---

Al+++      gl   NaCl   37°C 0.15M U      K1=8.25   B2=13.07   1987VBe (46020) 479  
B(AlHL)=10.50  
B(AlH-2L2)=-0.21  
B(Al2H-2L2)=12.69  
B(Al3H-4L3)=15.08

$$B(AlH-1L2)=6.78$$

---

Al+++      gl   KCl   25°C 0.10M C      K1=8.10   B2=12.90   1986GPc (46021) 480  
B(AlHL)=10.81  
K(AlL2=AlH-1L2+H)=-6.10  
K(Al+L+HL)=11.14  
B(AlHL2)=16.84

$$K(AlH-1L2=AlH-2L2+H)=-7.17$$

---

Al+++      NaCl   25°C 0.15M U      K1=8.0   B2=13.00   1986MAa (46022) 481  
K(Al+HL)=4.7  
K(AlHL=AlL+H)=-2.5  
K(AlL=AlH-1L+H)=-3.4

25-37 C. From a survey of literature data

---

Al+++      kin   NaNO3   205°C   var   U      K1=10.72      1984LKa (46023) 482  
K(Al+HL)=6.56  
K(Al+H2L)=2.91

---

Al+++      gl   KNO3   25°C 0.10M C      K1=7.98      1984MMb (46024) 483  
K(AlL+H)=2.94  
K(AlL=AlH-1L+H)=-3.31

---

Al+++      gl   NaCl   25°C 0.60M C      1983OSd (46025) 484  
B(-2,1,1)=-2.68  
B(-3,1,1)=-4.925  
B(-6,1,2)=-12.53  
B(-13,3,3)=-21.77

$$B(p,q,r): pH + qAl + rH3L = AlqHp(H3L)r$$

---

Al+++      gl   NaCl   25°C 0.60M C      1983OSe (46026) 485  
B(-2,1,1)=-2.68  
B(-3,1,1)=-4.925  
B(-6,1,2)=-12.53  
B(-13,3,3)=-21.77

$$B(p,q,r): pH+qAl+r(H3L)=HpAlq(H3L)r$$

---



Al+++ gl NaCl 37°C 0.15M C K1=7.87 1982JAc (46027) 486  
 B(AlHL)=10.12  
 B(AlH-1L)=4.64  
 B(AlH-1L2)=8.8

Al+++ gl NaCl 25°C 0.12M C 1981RMB (46028) 487  
 K(Al+H-1L)=18.0  
 K(AlL(OH)2+2H)=18.4

Al+++ gl NaClO4 25°C 0.10M U M K1=8.65 1975RMA (46029) 488  
 B(AlL(Cys))=14.90  
 K(Al+L+HPO4)=19.29

Al+++ gl NaClO4 33°C 0.25M U 1961PPa (46030) 489  
 K(Al+H3L=AlL+3H)=-4.7  
 K(AlH-1L+H)=3.5  
 K(Al(OH)H-1L+H=AlH-1L)=6.8

\*\*\*\*\*  
 C6H9NO6 H3L CAS 41035-84-1 (4367)  
 N-Carboxymethyl-L-aspartic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.20M	C			K1=2.24 B(AlHL)=6.15 B(AlH-1L)=-1.91	1997KSA (46374)	490

\*\*\*\*\*  
 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
Al+++	gl	NaCl	25°C	0.60M	C			K1=11.097 B(AlH-1L)=5.67 B(AlH-2L)=-2.52 B(Al2H-2L2)=13.16	1990Hb (46686)	491

Al+++ gl NaClO4 25°C 0.50M C K1=10.80 1984NAa (46687) 492

Al+++ gl NaClO4 25°C 0.10M U T K1=10.53 B2=19.08 1981DSA (46688) 493  
 At 35 C: K1=10.30, B2=18.57; 45 C: 10.18, 18.32

Al+++ gl KNO3 35°C 0.10M U K1=11.61 1980KHb (46689) 494

Al+++ gl NaClO4 25°C 0.10M U M K1=12.72 1975RMA (46690) 495  
 B(AlL(Cys))=18.89  
 K(Al+L+HPO4)=23.89

Al+++ sp NaClO4 25°C 0.20M U K1=11.37 1967BDb (46691) 496  
 By glass electrode: K(AlL+H)=1.90, K(AlLOH+H)=5.09, K(AlL(OH)2+H)=8.28

-----  
Al+++ dis NaClO4 20°C 0.10M U T K1=9.5 1963STc (46692) 497  
-----

Al+++ gl KCl 20°C 0.10M U K1=>10 1948SBa (46693) 498  
K(AlLOH+H)=5.8  
K(AlL(OH)2+H)=8.6  
-----

\*\*\*\*\*  
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  
-----

Al+++ gl NaCl 37°C 0.15M C 2002DCa (47529) 499  
B(Al2H-2L)=1.163  
-----

Al+++ gl NaClO4 25°C 0.50M U 1984CDa (47530) 500  
K(Al(OH)+HL)=3.62  
K(Al(OH)+L)=8.45  
-----

\*\*\*\*\*  
C6H10O4S2 H2L CAS 7244-02-2 (438)  
1,2-Bis(carboxymethylthio)ethane; HOOC.CH2.S.CH2.CH2.S.CH2.COOH  
-----

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

Al+++ gl NaClO4 25°C 0.50M C K1=2.05 1985NAb (48234) 501  
B(AlHL)=12.46  
-----

\*\*\*\*\*  
C6H10O8 H2L Saccharic acid CAS 87-73-0 (1191)  
D-2,3,4,5-Tetrahydroxy-1,6-hexanedioic acid, Glucaric acid; HOOC.(CHOH)4.COOH  
-----

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

Al+++ gl KNO3 25°C 0.10M C 1984MMb (48467) 502  
B(AlH-1L)=1.57  
\*K(AlH-1L)=-3.76  
-----

\*\*\*\*\*  
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  
-----

Al+++ gl NaClO4 25°C 0.50M C K1=7.49 1984NAa (48687) 503  
-----

Al+++ gl KNO3 35°C 0.10M U K1=9.33 1980KHb (48688) 504  
-----

\*\*\*\*\*  
C6H11NO5 H2L (1233)  
N-Hydroxyimino-2,2'-dipropanoic acid; HO.N(CH(CH3)COOH)2  
-----

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

Al+++ gl KNO3 25°C 0.10M C K1=5.9 1987AKa (48839) 505  
\*\*\*\*\*

C6H12N2O4 H2L CAS 4726-83-4 (5911)  
N,N-Dihydroxyhexanediamide; HN(OH).CO.(CH2)4.CO.NH(OH)

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

Al+++ gl NaNO3 25°C 0.10M C K1=14.20 1989EHa (49332) 506  
\*\*\*\*\*

C6H12O6 HL CAS 498-43-1 (5803)  
3-Deoxy-D-ribohexanoic acid;

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

Al+++ gl NaCl 25°C 0.10M C K1=1.97 1994BHa (49529) 507  
\*K(AlL)=-2.83  
K(AlH-1L=AlH-3L+2H)=-9.17  
\*\*\*\*\*

C6H12O7 HL Gluconic acid CAS 526-95-4 (904)  
D-Gluconic acid, 2,3,4,5,6-Pentahydroxyhexanoic acid; HO.CH2(CHOH)4.COOH

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

Al+++ gl NaNO3 25°C 0.10M C 1995EOa (49695) 508  
B(AlH-1L)=-0.84  
B(AlH-3L)=-10.70

-----  
Al+++ gl NaCl 25°C 0.10M C K1=2.01 1994BHa (49696) 509  
\*K(AlL)=-2.89  
K(AlH-1L=AlH-3L+2H)=-9.30

-----  
Al+++ gl KNO3 25°C 0.10M C K1=1.98 1984MMb (49697) 510  
\*K(AlL)=-2.87  
K(AlH-1L=AlH-3L+2H)=-9.29  
\*\*\*\*\*

C6H13NO2 HL Leucine CAS 61-90-5 (47)  
2-Amino-4-methylpentanoic acid; H2N.CH(CH2.CH(CH3)2)COOH

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

Al+++ oth NaClO4 35°C 0.10M C K1=7.92 B2=14.01 1986SGd (50058) 511  
B3=18.90

Method: electrophoresis

\*\*\*\*\*  
C6H13NO2 HL CAS 4312-93-0 (4386)  
Hexanohydroxamic acid; CH3.CH2.CH2.CH2.CH2.CO.NH.OH

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

Al+++ gl KCl 25°C 0.20M C K1=8.32 B2=16.17 2000FEc (50226) 512

B(AlH-1L2)=11.26

\*\*\*\*\*

C6H13NO4 HL Bicine CAS 150-25-4 (2124)  
N,N-Bis(2-hydroxyethyl)glycine; (HO.CH2.CH2)2N.CH2.COOH

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

Al+++ gl KNO3 25°C 0.10M C 1984MMb (50340) 513

K(Al+HL)=3.38

K(AlHL=AlH-2L+3H)=-13.72

\*\*\*\*\*

C6H13O9P H2L CAS 59-56-3 (3049)  
alpha-D-Glucose-1-phosphoric acid; Glucopyranose-1-phosphoric acid;

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

Al+++ gl KCl 25°C 0.20M C K1=5.60 B2=10.41 2001CRa (50620) 514

B(AlH2L)=ca.9.40

K(AlHL)=8.50

B(AlHL2)=14.04

B(Al2H-1L2)=11.08

B(Al2H-2L2)=5.73, B(Al2H-3L2)=0.84, B(Al2H-4L2)=-5.09, B(AlH-3L)=-11.80.

Additional methods: 13C, 27Al and 31P nmr.

\*\*\*\*\*

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  
-----

Al+++ gl oth/un 25°C ? U T K1=6.63 B2=12.86 1960PEd (51001) 515

7 C: K1=6.67, K2=6.38

\*\*\*\*\*

C6H15N3O2 HL CAS 52760-35-7 (6670)  
Lysine hydroxamic acid; H2N.(CH2)4.CH(NH2)CO.NHOH

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

Al+++ gl KCl 25°C 0.20M C B2=21.28 2002ECa (51424) 516

B(AlH2L)=24.21

B(AlH2L2)=36.94

B(AlHL2)=29.84

\*\*\*\*\*

C6H15N3O3 L (6613)  
1,3,5-Triamino-1,3,5-trideoxy-cis-inositol,5-Amino-5-deoxy-streptamine;

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

Al+++ gl KCl 25°C 0.10M C K1=11.8 B2=18.8 1993HGa (51447) 517

B(AlHL2)=25.3

\*K(AlL2)=-8.1

\*K(A1H-1L2)=-8.9

\*K(A1H-2L2)=-9.1

\*K(A1H-3L2)=-9.7

\*\*\*\*\*

C6H15O15P3 H6L Ins(1,2,6)P3 CAS 28841-62-5 (6479)  
D-myo-Inositol 1,2,6-trisphosphoric acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl R4N.X 25°C 0.10M C K1=13.72 1995MBb (51533) 518  
B(A1HL)=19.18  
B(A12L)=19.72  
B(A1H-1L)=6.10

Medium: 0.10 M (n-Bu)4NBr.

\*\*\*\*\*

C6H15O15P3 H6L CAS 88269-39-0 (8168)  
D-myo-Inositol-1,4,5-triphosphoric acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl R4N.X 25°C 0.10M C K1=13.37 1995MBb (51543) 519  
B(A1HL)=18.98  
B(A1H-1L)=5.84  
B(A1H-2L)=-1.82

Medium: 0.10 M (n-Bu)4NBr.

\*\*\*\*\*

C6H16O6P2 H4L CAS 4721-22-6 (3708)  
Hexane-1,6-diphosphonic acid; H2O3P(CH2)6PO3H2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M U K1=14.66 1967KLa (51791) 520  
\*\*\*\*\*

C7H4N2O7 H2L CAS 609-99-4 (400)  
3,5-Dinitrosalicylic acid; (O2N)2.C6H2(OH).COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 30°C 0.10M C K1=7.53 B2=13.24 1996MMa (52461) 521  
K3=4.24

-----  
Al+++ gl NaClO4 25°C 0.10M U K1=8.81 B2=15.39 1979LTc (52462) 522  
K3=4.34

\*\*\*\*\*

C7H5NO4 H2L Quinolinic acid CAS 89-00-9 (567)  
2,3-Pyridinedicarboxylic acid; C5H3N.(COOH)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ nmr NaCl 25°C 1.33M U K1=3.72 B2= 7.10 2001LKc (52620) 523

Method: 27A1 NMR spectroscopy.

-----  
Al+++ gl NaClO4 25°C 0.50M C K1=4.50 B2=7.00 1986MNB (52621) 524  
\*\*\*\*\*

C7H5N04 H2L CAS 499-80-9 (566)  
2,4-Pyridinedicarboxylic acid; C5H3N.(COOH)2  
-----

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

Al+++ gl NaClO4 25°C 0.50M C K1=4.35 B2=7.30 1986MNB (52649) 525  
\*\*\*\*\*

C7H5N04 H2L CAS 100-26-5 (2528)  
2,5-Pyridinedicarboxylic acid, Isocinchomeric acid; C5H3N.(COOH)2  
-----

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

Al+++ gl NaClO4 25°C 0.50M U K1=3.95 B2=7.24 1970NAB (52664) 526  
\*\*\*\*\*

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  
-----

Al+++ sp NaCl 25°C 1.00M U K1=11.37 1993NRA (52751) 527  
K(Al+HL)=7.44  
-----

Al+++ gl NaClO4 25°C 0.50M U K1=4.87 B2=8.32 1968NAC (52752) 528  
By spectrophotometry: K1=4.85  
\*\*\*\*\*

C7H5N05 H2L Nitrosalicylic CAS 85-38-1 (1416)  
2-Hydroxy-3-nitrobenzoic acid; HO.C6H3(NO2).COOH  
-----

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

Al+++ gl KNO3 30°C 0.10M C K1=10.22 B2=18.20 1996MMA (52972) 529  
K3=6.87  
K(AlL3+H)=6.56  
\*\*\*\*\*

C7H5N05 H2L Nitrosalicylic CAS 96-97-9 (148)  
2-Hydroxy-5-nitrobenzoic acid; HO.C6H3(NO2).COOH  
-----

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

Al+++ gl KCl 25°C 0.10M C K1=10.65 B2=19.81 2004GAa (53035) 530  
B3=25.74  
-----

Al+++ gl KCl 30°C 0.10M C K1=10.91 B2=19.67 1996MMA (53036) 531  
K3=5.36  
K(AlL3+H)=6.24  
-----

Al+++ gl NaClO4 25°C 0.10M U K1=11.11 B2=19.73 1979LTc (53037) 532  
K3=6.13

-----  
Al+++ sp oth/un 25°C 0.10M C 1979PTb (53038) 533  
K(Al+HL=AlL+H)=1.11

-----  
Al+++ sp NaClO4 29°C 1.00M U M 1976DDa (53039) 534  
K(Co(en)2(NH3)L+Al)=-0.45

\*\*\*\*\*  
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

-----  
Al+++ sp NaClO4 29°C 1.00M U M 1976DDa (53307) 535  
K(Co(en)2(NH3)L+Al)=-0.72

\*\*\*\*\*  
C7H6O2 HL Tropolone CAS 533-75-5 (3129)  
2-Hydroxycyclohepta-2,4,6-trien-1-one;

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

-----  
Al+++ gl NaCl 25°C 0.60M C 19900Ha (53665) 536  
K(Al+3HL=AlL3(s)+3H)=11.21  
Kso=-31.05

\*\*\*\*\*  
C7H6O2 HL Benzoic Acid CAS 65-85-0 (462)  
Benzenecarboxylic acid; C6H5.COOH

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

-----  
Al+++ gl NaCl 25°C 0.60M C 19910Ha (53821) 537  
B(-1,1,1)=-2.67  
B(-3,2,1)=-7.446

B(p,q,r); pH+qAl+rHL=HpAlq(HL)r

-----  
Al+++ gl NaClO4 25°C 0.50M U 1970NLa (53822) 538  
B(AlL(OH))=12.1

\*\*\*\*\*  
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

-----  
Al+++ sp oth/un 23°C 0.10M U 1994KGa (54139) 539  
Keff=4.8

Method: spectrophotometric using pyrocatechol violet. Tris buffer adjusted  
to a pH=5.34 with HCl

-----  
Al+++ gl NaCl 25°C 0.60M C T 19830Sc (54140) 540

B(-2,1,1)=-3.052  
 B(-4,1,2)=-8.39  
 B(-5,1,2)=-15.99  
 B(-6,1,2)=-25.31

B(p,q,r); pH+qAl+r(H2L)=HpAlq(H2L)r

-----  
 Al+++ gl NaCl 25°C 0.12M C T K1=13.7 B2=26.70 1981Rmb (54141) 541  
 K3=10.73  
 K(AlH-2L+2H)=10.40  
 K(AlH-3L+H)=9.37  
 -----

Al+++ sp NaClO4 29°C 1.00M U M 1976DDa (54142) 542  
 K(Co(en)2(NH3)L+Al)=-0.46  
 -----

Al+++ kin NaClO4 25°C 0.10M U 1975SVa (54143) 543  
 K(Al+HL=AlL+H)=0.067  
 -----

Al+++ gl KNO3 20°C 0.10M U K1=12.9 B2=23.20 1969HBb (54144) 544  
 K3=6.6  
 -----

Al+++ EMF NaNO3 18°C 1.0M U 1961COb (54145) 545  
 K(Al+3HL=AlHL2+H2L)=4.5  
 -----

Method: quinhydrone electrode

-----  
 Al+++ sp NaClO4 27°C 0.20M U I 1959DAa (54146) 546  
 K(Al+HL=AlL+H)=-0.18  
 K=0.26(I=0),0.06(I=0.02),0.01(I=0.05),-0.13(I=0.10). Recalculated values  
 -----

Al+++ sp oth/un 27°C ->0 U K1=14.11 1959DAa (54147) 547  
 \*\*\*\*\*  
 C7H6O3 H2L CAS 99-06-9 (1370)  
 3-Hydroxybenzoic acid; HO.C6H4.COOH  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaCl 25°C 0.60M C 19910Ha (54375) 548  
 B(-1,1,1)=-2.59  
 B(-3,2,1)=-7.453  
 -----

B(p,q,r); pH+qAl+rHL=HpAlq(HL)r

\*\*\*\*\*  
 C7H6O4 H3L CAS 303-38-8 (1398)  
 2,3-Dihydroxybenzoic acid; C6H3(OH)2.COOH  
 -----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.10M C K1=10.62 B2=19.20 2004GAa (54461) 549  
 B(Al2H-3L2)=10.30  
 B(AlH-1L2)=13.50  
 -----

Al+++ gl KCl 25°C 0.20M C T K1=10.32 B2=18.26 1993KAa (54462) 550



B(A1H-1L2)=11.56  
B(A1H-2L2)=1.74  
B(A12H-2L2)=13.62  
B(A12H-3L2)=8.87

\*\*\*\*\*

C7H6O4 H3L Resorcylic acid CAS 89-86-1 (876)  
2,4-Dihydroxybenzoic acid, b-Resorcylic acid; C6H3(OH)2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C T K1=8.71 B2=15.03 1993KAa (54514) 551  
B(A12H-2L2)=9.1  
B(A1H-1L2)=7.21

\*\*\*\*\*

C7H6O4 H3L CAS 409-79-9 (1115)  
2,5-Dihydroxybenzoic acid; C6H3(OH)2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C T K1=9.74 B2=17.17 1993KAa (54580) 552  
B(A12H-2L2)=11.5  
B(A1H-1L2)=9.97

-----  
Al+++ gl NaClO4 25°C 0.50M C T 1985CDa (54581) 553  
K(A1+HL)=10.4  
K(A1+2HL)=18.15

-----  
Al+++ sp NaClO4 20°C 0.09M U TIH 1971SGa (54582) 554  
K(A1+H2L=A1HL+H)=-3.96  
K(A1+H2L=A1HL+H)(I=0.01)=-3.49, (I=0.20)=-4.47. DH=22.7 kJ mol<sup>-1</sup>, DS=173

\*\*\*\*\*

C7H6O4 H3L g-Resorcylic ac CAS 303-07-1 (1624)  
2,6-Dihydroxybenzoic acid; C6H3(OH)2.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C T K1=12.79 B2=23.67 1993KAa (54603) 555  
B(A12H-2L2)=17.2  
B(A1H-1L2)=16.46

\*\*\*\*\*

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  
-----  
Al+++ gl KCl 25°C 0.20M C K1=16.47 B2=29.38 1993KAa (54657) 556  
B3=38.35  
B(A1HL)=21.09  
B(A12H-2L2)=25.03

-----

Al+++ sp none 25°C 0 U K1=15.33 1990SMd (54658) 557

Al+++ gl NaCl04 25°C 0.50M C K1=16.1 1985CDa (54659) 558  
K(Al+HL)=7.8

Al+++ gl KCl 25°C 0.10M C K1=16.87 B2=29.88 1985KPa (54660) 559  
K3=8.76  
\*K(AlL)=-5.77  
\*K(AlL2)=-8.39  
K(Al+H2L=AlH2L)=2.85  
K(AlL+H)=4.66

Al+++ gl KNO3 25°C 0.20M U K1=15.03 B2=27.64 1982H0b (54661) 560  
K3=9.91

\*\*\*\*\*  
C7H6O5 H4L CAS 610-02-6 (3725)  
2,3,4-Trihydroxybenzoic acid; (HO)3.C6H2.CO0H

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

Al+++ gl KCl 25°C 0.20M C K1=9.10 B2=15.94 1993KAa (54719) 561  
B(AlH-1L2)=10.26  
B(AlH-2L2)=2.26  
B(AlH-2L3)=6.79  
B(Al2H-2L2)=11.09

B(Al2H-3L2)=6.49, B(Al2H-4L2)=-0.69. Ligand as H2L

\*\*\*\*\*  
C7H6O5 H4L Gallic acid CAS 149-91-7 (446)  
3,4,5-Trihydroxybenzoic acid; C6H2(OH)3.CO0H

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

Al+++ gl NaCl 25°C 0.60M C 19820Sa (54748) 562  
B(-5,3,1)=-12.52  
B(-9,4,3)=-20.25

B(p,q,r); pH+qAl+r(H3L)=HpAlq(H3L)r. K(Al+H3L+4H2O=AlL.H2O(s)+3H)=-6.2

Al+++ gl NaCl 25°C 0.60M C 19810Sa (54749) 563  
B(-2,1,1)=-4.933  
B(-3,1,1)=-9.43  
B(-6,1,2)=-21.98  
B(-9,1,3)=-37.69

B(p,q,r): pH + qAl + rH3L = HpAlqH3Lr. B(-8,2,3)=-22.65, B(-9,2,3)=-27.81,  
B(-10,2,3)=-32.87, B(-11,2,3)=-39.56.

\*\*\*\*\*  
C7H6O6S H3L CAS 5965-83-3 (399)  
5-Sulfosalicylic acid, 2-Hydroxy-5-sulfobenzoic; HO3S.C6H3(OH).CO0H

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

Al+++ gl NaClO4 25°C 0.50M C K1=11.8 B2=21.2 1985CDa (54930) 564

Al+++ sp NaClO4 25°C 0.10M U 1977PTa (54931) 565  
K(Al+HL=AlL+H)=0.88

Al+++ sp NaClO4 29°C 1.00M U M 1976DDa (54932) 566  
K(Co(en)2(NH3)L+Al)=-0.30

Al+++ gl KNO3 20°C 0.10M U K1=12.3 B2=22.00 1969HBb (54933) 567  
K3=5.8

Al+++ gl NaClO4 30°C 0.20M U K1=12.20 B2=22.21 1967AMa (54934) 568

Al+++ sp NaClO4 31°C 0.20M U TI 1963NAa (54935) 569  
K(Al+HL=AlL+H)=0.23

K=0.79(I=0.02),0.55(I=0.05),0.37(I=0.10). Recalculated values  
At I=0.1 M: K=0.22(15 C),0.41(28 C),0.53(40 C); DH=20.5 kJ mol<sup>-1</sup>, DS=58

Al+++ sp NaClO4 25°C 0.10M U K1=12.91 B2=22.92 1960BSb (54936) 570  
By glass electrode K1=13.20, K2=9.63, K4=6.06

Al+++ sp oth/un ? 0.20M U TI 1957NAa (54937) 571  
K(Al+HL=AlL+H)=0.19

K=0.36(I=0.02),0.31(I=0.05). Recalculated values

\*\*\*\*\*

C7H6O9S2 H3L CAS 56507-30-3 (2659)  
3,5-Disulfosalicylic acid; (HO3S)2.C6H2(OH).COOH

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

Al+++ gl NaClO4 25°C 0.50M C T K1=11.51 B2=20.19 1978LAa (55091) 572

\*\*\*\*\*

C7H7NO2 HL CAS 495-18-1 (184)  
Benzohydroxamic acid; C6H5.CO.NH.OH

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

Al+++ gl KCl 25°C 0.20M C K1=7.57 B2=14.60 2000FEc (55494) 573

\*\*\*\*\*

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

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

Al+++ sp non-aq 25°C 100% U 1977SWa (55702) 574  
K(AlCl3+L)=2.20

Medium: Et2O

\*\*\*\*\*

C7H8N2O2 L CAS 99-52-5 (470)  
2-Methyl-4-nitro-aminobenzene; CH3.C6H3(NO2).NH2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp diox/w 25°C 100% U 1976BSa (55880) 575  
K(AlCl3+L)=2.26

\*\*\*\*\*  
C7H8N2O2 L CAS 89-62-3 (466)  
2-Nitro-4-methylaminobenzene; CH3.C6H3(NO2).NH2  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp non-aq 25°C 100% U T H 1988DNa (55887) 576  
K(AlBr3+L)=1.32

By fibre-optic photometry in diethylether. DH=-44 kJ mol<sup>-1</sup> from data at -15 to 25 C.  
\*\*\*\*\*  
C7H8N2O2 L CAS 119-32-4 (467)  
3-Nitro-4-methylaminobenzene; CH3.C6H3(NO2).NH2  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp diox/w 25°C 100% U 1976BSa (55903) 577  
K(AlCl3+L)=2.88

\*\*\*\*\*  
C7H8N2O2 L CAS 611-05-2 (764)  
4-Nitro-3-methylaniline; CH3.C6H3(NO2).NH2  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp diox/w 25°C 100% U 1976BSa (55917) 578  
K(AlCl3+L)=1.82

\*\*\*\*\*  
C7H9NO L CAS 14529-53-4 (2473)  
2-Ethoxypyridine; C5H4N.OC2H5  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp non-aq 25°C 100% U M 1981SKe (56378) 579  
K(AlCl3+L)=4.23

Medium: DMF  
\*\*\*\*\*  
C7H9NO L CAS 13337-79-6 (2635)  
N-Ethylpyridine-2-one; (O:)C5H4N-C2H5  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp non-aq 25°C 100% U M 1981SKe (56400) 580  
K(AlCl3+L)=4.61

Medium: DMF  
\*\*\*\*\*

C7H9NO2 H2L DHB (8381)  
3,4-Dihydroxybenzylamine;

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

Al+++ gl KCl 25°C 0.10M C 2002A0a (56411) 581

B(-2,1,1)=-5.58  
B(-4,1,2)=-13.74  
B(-6,1,3)=-25.51  
B(-7,1,3)=-35.55

B(-8,1,3)=-46.39, B(-9,1,3)=-56.79, B(-6,2,2)=-19.58

B(p,q,r) defined for the protonated ligand, H3L+: pH+qAl+rH3L=HpAlq(H3L)r

\*\*\*\*\*

C7H9NO2 HL CAS 30652-11-0 (2458)

3-Hydroxy-1,2-dimethylpyridin-4(1H)-one; (OH)(CH3)(O:)C5H2N.CH3

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

Al+++ gl KNO3 25°C 0.10M C K1=12.20 B2=23.25 2004SGc (56423) 582  
B3=32.62

Al+++ gl KCl 25°C 0.10M C K1=12.20 B2=23.25 1994MRa (56424) 583  
K3=9.37

Al+++ gl KCl 25°C 0.10M C K1=12.20 B2=23.25 1992CMb (56425) 584  
K3=9.37

Al+++ gl NaCl 25°C 0.15M C I K1=11.91 B2=22.83 1989CNa (56426) 585  
B3=32.35

Data also at I=0.6 M(NaCl): K1=11.57, B2=22.01, B3=30.90

\*\*\*\*\*

C7H9NO3 HL CAS 157070-43-4 (7154)

3-Hydroxy-5-methyl-2-(N-methylformamido)furan;

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

Al+++ gl NaCl 25°C 0.60M C K1=7.28 B2=13.42 1994LSc (56445) 586  
K3=4.83

B(-1,1,1)=0.19  
B(-2,2,1)=-0.76  
B(-3,3,1)=-3.02

B(-7,3,3)=-10.43, B(-4,2,1)=-12.08. B(p,q,r): pH+qHL+rM=Hp(HL)qMr.

\*\*\*\*\*

C7H10O7P2 H4L CAS 2809-26-9 (8731)

1-Phenyl-1-hydroxymethylene-1,1-diphosphonic acid;

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

Al+++ gl KNO3 25°C 0.10M C K1=18.50 2002GKc (56762) 587

B(AlH-1L)=13.75

B(AlH-2L)=3.57  
B(AlH3L2)=43.41

\*\*\*\*\*

C7H11N06P2 H4L CAS 4712-06-5 (4470)

Amino(phenyl)methylenediphosphonic acid;

---

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	U			K1=18.97 B2=26.31 K(Al+HL)=12.50 B(Al2L)=23.09 K(Al+HL+L)=19.68	1969DMd (56938)	588

\*\*\*\*\*

C7H1109P H5L (5041)  
2-Phosphonobutane-1,2,4-tricarboxylic acid; H00CCH2CH2C(P03H2)(COOH).CH2COOH

---

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.50M	C			B(AlH-6L2)=18.42 B(AlH-6L)=16.06	1999SEa (57023)	589

\*\*\*\*\*

C7H1202 HL CAS 98-89-5 (2793)  
Cyclohexanecarboxylic acid, Hexahydrobenzoic acid; C6H11.COOH

---

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.60M	C			B(-1,1,1)=-3.48 B(-3,2,1)=-8.04	19910Ha (57227)	590

B(p,q,r); pH+qAl+rHL=HpAlq(HL)r

\*\*\*\*\*

C8H604 H2L Phthalic acid CAS 88-99-3 (113)  
Benzene-1,2-dicarboxylic acid; C6H4(COOH)2

---

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.60M	C			K1=2.94 B2=4.97 B(-2,2,1)=-2.50 B(-4,3,1)=-8.47 B(-2,2,2)=-0.07	1988HBa (58943)	591

B(p,q,r): pH+qAl+rL=HpAlqLr

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Al+++	gl	NaClO4	25°C	0.50M	U			K1=3.18 B2=6.32	1970NLa (58944)	592
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C8H606 H4L (6671)  
2,3-Dihydroxybenzene-1,4-dicarboxylic acid;

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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Al+++ gl KCl 25°C 0.20M C K1=3.90 1993KAa (59077) 593  
B(AlH-1L)=0.96  
B(AlH-2L2)=-0.36  
B(AlH-3L2)=-8.11  
B(Al2H-3L2)=1.36

B(Al3H-5L3)=2.27, B(Al3H-6L3)=-2.11. Ligand as H2L ?

\*\*\*\*\*

C8H8NO2Cl HL CAS 2153-11-9 (4570)  
N-Chloroacetyl-N-phenylhydroxylamine; Cl.CH2.CO.N(C6H5).OH

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

Al+++ gl mixed 30°C 50% U K1=6.94 B2=14.52 1971GSc (59284) 594  
K3 = 6.62

Medium: 50% acetone/H2O, 0.5 M NaClO4

\*\*\*\*\*

C8H8N2O2 H2L (3821)  
1-(2'-Hydroxyphenyl)-4-oxo-2,3-diazabut-1-ene;

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

Al+++ sp alc/w 19°C 28% U 1963HOc (59324) 595  
K(?)=4.7  
K(?)=9

Medium: 28% EtOH, 0.025 M, acetate buffer

\*\*\*\*\*

C8H8O2 HL 2-Acetylphenol CAS 118-93-4 (1888)  
2-Hydroxyacetophenone; HO.C6H4.CO.CH3

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

Al+++ gl NaCl 25°C 0.60M C K1=7.34 1999MTa (59456) 596  
B(AlH-1L)=1.97

By spectrophotometry: K1=7.30

\*\*\*\*\*

C8H8O3 H2L CAS 614-75-5 (4475)  
2-Hydroxyphenylethanoic acid; HO.C6H4.CH2.COOH

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

Al+++ gl NaCl 25°C 0.60M C K1=8.06 1999MTa (59714) 597  
B(AlH-1L)=3.11

Confirmed by H-nmr

\*\*\*\*\*

C8H8O3 HL Mandelic Acid CAS 611-72-3 (80)  
2-Phenyl-2-hydroxyethanoic acid; C6H5.CH(OH).COOH

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

Al+++ EMF oth/un ? ? U K1=13.91 B2=26.90 1968OSb (59810) 598

K3=11.98

\*\*\*\*\*

C8H8O4 HL CAS 520-45-6 (4478)  
3-Acetyl-2-hydroxy-6-methylpyran-4-one, Dehydroethanoic acid;

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

Al+++ gl diox/w 35°C 50% U K1=5.39 B2=10.32 1971MAa (60082) 599  
Medium: 50% dioxan, 0.1 M NaClO4

\*\*\*\*\*

C8H8O5 H2L CAS 5629-08-3 (679)  
7-Oxy-bicyclo[2.2.1]-hept-5-ene-2,3-dicarboxylic acid;

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

Al+++ gl NaCl 37°C 0.15M C 1988HYa (60124) 600  
B(AlHL)=9.279  
B(Al+L=Al(OH)L+H)=1.565  
B(AlHL2)=13.585

\*\*\*\*\*

C8H9NOS HL CAS 4822-44-0 (3240)  
N-(Mercaptoacetyl)aniline (thioglycolanilide); C6H5.NH.CO.CH2.SH

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

Al+++ gl diox/w 30°C 50% U K1=6.94 B2=13.00 1973ABb (60158) 601  
Medium: 0.1 M NaClO4

\*\*\*\*\*

C8H9NO2 L CAS 1849-49-6 (5907)  
5'-Deoxyipyridoxal

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

Al+++ gl KCl 25°C 1.00M C K1=6.15 B2=12.19 1989MSb (60246) 602

\*\*\*\*\*

C8H9NO2 HL CAS 4746-61-6 (4512)  
Glycolanilide;

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

Al+++ gl diox/w 30°C 50% U K1=8.48 B2=16.17 1973ABb (60250) 603  
Medium: 50% dioxan, 0.1 M NaClO4

\*\*\*\*\*

C8H9NO2 HL (2591)  
N-Phenyl-N-acetohydroxamic acid; CH3.CO.N(OH)C6H5

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

Al+++ gl KCl 25°C 0.20M C K1=7.84 B2=15.10 2000FEc (60281) 604  
B(AlH-1L2)=10.77



-----  
Al+++ gl mixed 30°C 50% U K1=9.20 B2=17.30 1971GSc (60282) 605  
K3=7.53

Medium: 50% acetone/H2O, 0.5 M NaClO4

\*\*\*\*\*

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  
-----

Al+++ gl oth/un 17°C ? U K1=6.72 B2=13.01 1973Kpd (60382) 606

\*\*\*\*\*

C8H9NO3 HL Pyridoxal CAS 65-22-5 (110)

3-Hydroxy-5-(hydroxymethyl)-2-methyl-4-pyridinecarboxaldehyde;

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

Al+++ gl KNO3 25°C 0.10M C K1=2.45 1981TMe (60424) 607

\*\*\*\*\*

C8H9NO4 H2L (4520)

Dehydroethanoic acid oxime;

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

Al+++ gl diox/w 35°C 50% U 1971MAa (60488) 608

K(Al+HL)=5.11

K(Al+2HL)=9.57

Medium: 50% dioxan, 0.01 M NaClO4

\*\*\*\*\*

C8H10NO6P H3L Codecarboxylase CAS 41468-25-1 (2555)

Pyridoxal-5-phosphoric acid;

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

Al+++ gl KCl 25°C 1.00M C M K1=10.48 1985SMd (60701) 609

K(AlL+H)=4.23

ternary complexes with 2-amino-3-phosphonopropionic acid

\*\*\*\*\*

C8H10O9 H4L CAS 137172-86-2 (6612)

SS-Oxydisuccinic acid; O(CH(COOH)CH2.COOH)2

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

Al+++ gl KCl 25°C 0.10M C K1=8.43 1992MMA (60902) 610

K(AlL+H)=3.42

\*K(AlL)=-5.31

\*K(AlH-1L)=-6.43

K(Al+HL)=5.87

\*\*\*\*\*

C8H10O9 H4L CAS 84852-72-2 (6611)

meso-Oxydisuccinic acid; O(CH(COOH)CH2.COOH)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C K1=9.17 1992MMa (60914) 611  
K(AlL+H)=3.37  
\*K(AlL)=-5.30  
\*K(AlH-1L)=-6.96  
K(Al+HL)=6.57

\*\*\*\*\*  
C8H10O10 H4L (5894)  
1-Hydroxy-3-oxapentane-1,2,4,5-tetracarboxylic acid;  
HO.CH(COOH).CH(COOH).O.CH(COOH).CH2(COOH)

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C K1=7.63 1989MMd (60926) 612  
K(AlL+H)=2.98  
K(AlH-1L+H)=5.05

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

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C K(Al+HL)=15.63 1989KSd (61075) 613  
K(AlHL+HL)=12.98  
K(AlH2L2+HL)=8.95

At pH 7: K1eff=8.01, K2eff=5.36, K3eff=1.33  
\*\*\*\*\*  
C8H11NO2 HL CAS 30652-12-1 (5889)  
3-Hydroxy-2-methyl-1-ethylpyridin-4-one;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl 25°C 0.15M C K1=11.75 B2=22.52 1989CNa (61090) 614  
B3=32.17

\*\*\*\*\*  
C8H11NO3 H2L Noradrenaline CAS 138-65-8 (253)  
Norepinephrine, 3,4-Dihydroxyphenylethanolamine; (HO)2C6H3.CH(CH2.NH2).OH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C K(Al+HL)=15.60 1989KSd (61160) 615  
K(AlHL+HL)=12.99  
K(AlH2L2+HL)=9.27  
B(AlHL)=25.33

B(AlH2L2)=48.08, B(AlH3L3)=67.05. At pH 7:K1eff=8.31, K2eff=5.70, K3eff=1.98

\*\*\*\*\*  
 C8H12N2O7 H3L (9050)  
 Aspartyl-aspartic acid;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.20M C K1=7.54 2003KFa (61471) 616  
 B(AlHL)=11.09  
 B(AlH2L)=14.42  
 B(AlH-1L)=3.01

\*\*\*\*\*  
 C8H12O7P2 H4L (7244)  
 1-Hydroxy-2-phenylethane-1,1-diphosphonic acid; HO.C(PO(OH)2)2.CH2C6H5

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 25°C 0.10M C K1=18.74 2002GKc (61738) 617  
 B(AlH-1L)=13.26  
 B(AlH-2L)=2.57  
 B(AlH3L2)=44.74

\*\*\*\*\*  
 C8H15N3O4 HL Gly-Ala-Ala CAS 6491-25-4 (6783)  
 Glycyl-alanyl-alanine;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 25°C 0.10M C K1=21.85 1983IMb (62249) 618

\*\*\*\*\*  
 C8H16N2O4 H2L CAS 38937-66-5 (5912)  
 N,N-Dihydroxyoctanediamide; HN(OH).CO.(CH2)6.CO.NH(OH)

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl NaNO3 25°C 0.10M C K1=14.59 1989EHa (62538) 619

\*\*\*\*\*  
 C8H19NO5 L Bis-tris CAS 6976-37-0 (2827)  
 Bis-(2-hydroxyethyl)imino-tris(hydroxymethyl)methane;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ sol NaCl 25°C 0.10M U T K=2.63  
 1990WPa (63054) 620

K=2.6 at 50 C. K: Al(OH)4+H2L=Al(OH)2L+2H2O

\*\*\*\*\*  
 C9H6NOCl HL CAS 130-16-5 (1268)  
 5-Chloro-8-hydroxyquinoline;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl diox/w 25°C 60% U 1973SCd (63658) 621

B3=31.83

Medium: 60% dioxan, 0.1 M NaClO4

\*\*\*\*\*

C9H6N04IS 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
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Al+++	sp	NaCl	25°C	1.0M	C			K1=8.0	1988NMa (63776)	622
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Medium pH 1.8-3.5

Al+++	sp	KCl	25°C	0.14M	U	I		K1=7.9 K3=7.2	1982GTa (63777)	623
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In Al(III)-ferron-CTMAC solution: K1=8.5, K2 < 5.8, K3 > 10.8

Al+++	sp	oth/un	?	dil	U			B2=12.5	1971BRf (63778)	624
-------	----	--------	---	-----	---	--	--	---------	-----------------	-----

Al+++	gl	KNO3	28°C	0.10M	U			K1=6.76 B2=13.76	1971LSb (63779)	625
-------	----	------	------	-------	---	--	--	---------------------	-----------------	-----

Al+++	gl	KCl	25°C	0.10M	U			K1=7.6 K3=5.6 K(Al(OH)L2+H)=5.0	1961LSa (63780)	626
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\*\*\*\*\*

C9H6N2O3 HL CAS 5437-99-0 (3865)

5-Nitro-8-hydroxyquinoline;

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

Al+++	gl	diox/w	25°C	60%	U			B3=21.42	1973SCd (63860)	627
-------	----	--------	------	-----	---	--	--	----------	-----------------	-----

Medium: 60% dioxan, 0.1 M NaClO4

\*\*\*\*\*

C9H6O7 H4L CAS 609-98-3 (4591)

2-Hydroxybenzene-1,3,5-tricarboxylic acid; HO.C6H2(COOH)3

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

Al+++	EMF	NaCl	25°C	0.10M	U			K(Al+H2L)=4.97	1971PPE (64004)	628
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\*\*\*\*\*

C9H6O7 H4L CAS 54176-76-0 (4592)

5-Hydroxybenzene-1,2,4-tricarboxylic acid; HO.C6H2(COOH)3

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

Al+++	EMF	NaCl	25°C	0.10M	U			K(Al+H2L)=4.40	1971PPE (64008)	629
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\*\*\*\*\*

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

8-Hydroxyquinoline (8-quinolinol);

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

Al+++ oth oth/un 25°C 0.05M U 1989WHa (64233) 630  
K(Al+HL=AlL+H)=0.08

By fluorescence on silica immobilized ligand

-----  
Al+++ gl diox/w 25°C 50% U K1=11.17 B2=22.59 1978THc (64234) 631  
B3=32.74  
B(AlHL)=14.56  
B(AlHL2)=25.73  
-----

Al+++ gl diox/w 25°C 60% U 1973SCd (64235) 632  
B3=33.75

Medium: 60% dioxan, 0.1 M NaClO4

-----  
Al+++ sp alc/w ? 20% U 1971BRf (64236) 633  
B3=33.42

\*\*\*\*\*  
C9H7NO2 HL CAS 1127-45-3 (4614)  
8-Hydroxyquinoline-N-oxide;

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

Al+++ gl diox/w 30°C 50% U K1=9.30 B2=18.55 1970GMb (64399) 634

Medium: 50% dioxan, 0.3 M NaClO4

\*\*\*\*\*  
C9H7NO4S H2L Sulfoxine CAS 84-88-8 (448)  
8-Hydroxyquinoline-5-sulfonic acid;

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

Al+++ sp oth/un ? ? U K1=9.69 B2=18.70 1973BIb (64524) 635

\*\*\*\*\*  
C9H7N3O2S H2L CAS 22525-35-3 (4673)  
4-(2'-Thiazolylazo)-1,2-dihydroxybenzene; C3H2NS.N:N.C6H3(OH)2

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

Al+++ sp alc/w 22°C 2% U 1973PPa (64665) 636  
K(AlOH+2HL)=14.62

\*\*\*\*\*  
C9H8BrNOS HL CAS 292149-06-5 (8797)  
4-Bromo-2-(4,5-dihydro-2-thiazolyl)phenol;

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

Al+++ sp alc/w 25°C 73% C 2000LTb (64748) 637  
K(Al+HL=AlL+H)=3.746

Medium: 73.2% v/v MeOH, 2.4% DMF, 24.4% H2O, 0.10 M NaClO4.

By fluorescence,  $K(A1+HL=A1L+H)=3.590$ .

\*\*\*\*\*

C9H8N2O3S HL CAS 292149-08-7 (8799)  
2-(4,5-Dihydro-2-thiazolyl)-4-nitrophenol;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp alc/w 25°C 73% C 2000LTb (64810) 638

$K(A1+HL=A1L+H)=4.65$

Medium: 73.2% v/v MeOH, 2.4% DMF, 24.4% H2O, 0.10 M NaClO4.

\*\*\*\*\*

C9H8N2O3S HL CAS 292149-08-7 (8798)  
2-(4,5-Dihydro-2-thiazolyl)-5-nitrophenol;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp alc/w 25°C 73% C 2000LTb (64812) 639

$K(A1+HL=A1L+H)=4.08$

Medium: 73.2% v/v MeOH, 2.4% DMF, 24.4% H2O, 0.10 M NaClO4.

\*\*\*\*\*

C9H8N2O3S H2L CAS 148292-08-4 (7219)  
Nordesferriferrithiocin; (HO)C5NH3.C3NSH3(COOH)

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp KCl 25°C 0.10M C B2=22.0 1996LHa (64814) 640

$K(A1L2+H)=6.8$

$K(A1HL2+H)=3.7$

\*\*\*\*\*

C9H8N2O4S H2L CAS 15851-62-4 (3886)  
7-Amino-8-hydroxyquinoline-5-sulfonic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp NaNO3 25°C 0.10M C K1=8.52 1995SOa (64823) 641

\*\*\*\*\*

C9H8O4 H3L Caffeic acid CAS 331-39-5 (6037)  
3-(3,4-Dihydroxyphenyl)propenoic acid; (HO)2C6H3.CH:CH.COOH

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C 2002A0a (64917) 642

$B(-2,1,1)=-4.88$

$B(-3,1,1)=-9.45$

$B(-4,1,1)=-15.53$

$B(-6,1,2)=-22.24$

$B(-7,1,2)=-30.73$ ,  $B(-9,1,3)=-39.23$ .

$B(p,q,r): pH+qAl+rH3L=HpAlq(H3L)r$

-----  
Al+++ sp none 25°C 0 U K1=15.06 1990SMd (64918) 643

\*\*\*\*\*  
 C9H9NOS HL CAS 101821-30-1 (8796)  
 2-(4,5-Dihydro-2-thiazolyl)phenol;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ sp alc/w 25°C 73% C 2000LTb (65028) 644  
 K(Al+HL=AlL+H)=3.75

Medium: 73.2% v/v MeOH, 2.4% DMF, 24.4% H2O, 0.10 M NaClO4.  
 By fluorescence, K(Al+HL=AlL+H)=3.50.

\*\*\*\*\*  
 C9H9N3O2S2 HL Sulfathiazole CAS 72-14-0 (8357)  
 4-Amino-N-2-thiazolyl-benzenesulfonamide;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl alc/w 25°C 50% C K2=6.70 1999GAa (65132) 645

Medium: 50% EtOH/H2O, 0.10 M NaNO3.

\*\*\*\*\*  
 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  
 -----  
 Al+++ gl KNO3 35°C 0.10M U M 1980KHb (65923) 646  
 B(AlL(tripolyphosphate))=7.55

\*\*\*\*\*  
 C9H11NO3 H2L Tyrosine CAS 60-18-4 (4)  
 2-Amino-3-(4-hydroxyphenyl)propanoic acid; HO.C6H4.CH2.CH(NH2).COOH

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 35°C 0.10M U M 1980KHb (66210) 647  
 B(AlHL(tripolyphosphate))=7.95

\*\*\*\*\*  
 C9H11NO4 HL CAS 95215-59-1 (8724)  
 1-(2'-Carboxyethyl)-2-methyl-3-hydroxy-4-pyridinone;

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KNO3 25°C 0.10M C K1=13.04 B2=24.06 2002SGb (66302) 648

\*\*\*\*\*  
 C9H11NO4 H3L DOPA CAS 59-92-7 (5)  
 2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid; H2NCH(CH2C6H3(OH)2)COOH

-----  
 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
 -----  
 Al+++ gl KCl 25°C 0.20M C 1989KSd (66392) 649

K(Al+HL)=16.03  
 K(AlHL+HL)=13.21

K(A1H2L2+HL)=9.12

At pH 7: K1eff=8.08, K2eff=5.36, K3eff=1.17

-----  
Al+++ gl NaCl 25°C 0.12M U K1=19.60 1978RMc (66393) 650  
\*\*\*\*\*  
C9H12NO6P H3L PhosphoTyrosine CAS 41863-47-2 (5813)  
Phosphotyrosine; 4-((OH)2P(O).O)C6H4.CH2.CH(NH2)COOH  
-----

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

Al+++ gl KCl 25°C 0.20M C K1=10.37 1998KLb (66552) 651  
B(A1HL)=14.42  
B(A1H-1L)=4.08

\*\*\*\*\*  
C9H13NO2 L (7151)  
1,2-Diethyl-3-hydroxy-4-pyridinone  
-----

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

Al+++ gl KCl 25°C 0.10M C K1=13.42 B2=25.06 1994MRa (66793) 652  
K3=8.48

\*\*\*\*\*  
C9H13NO3 H2L (-)Adrenaline CAS 51-43-4 (252)  
4-(1-Hydroxy-2-(methylamino)ethyl)-1,2-dihydroxybenzene,  
Epinephrine;CH3NHCH(OH)C6H3(OH)2  
-----

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

Al+++ gl KCl 25°C 0.20M C 1989KSd (66857) 653  
K(A1+HL)=15.57  
K(A1HL+HL)=13.03  
K(A1H2L2+HL)=9.25  
B(A1HL)=25.81

B(A1H2L2)=49.08, B(A1H3L3)=68.57. At pH 7:K1eff=8.22, K2eff=5.68, K3eff=1.90  
\*\*\*\*\*  
C9H13N2O9P H3L UMP-5 CAS 58-97-9 (2948)  
Uridine-5'-monophosphoric acid;  
-----

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

Al+++ gl KCl 25°C 0.20M C K1=11.18 B2=17.49 1996AKa (66969) 654  
B(A1HL)=14.83

\*\*\*\*\*  
C9H14N3O8P H2L CMP-5 CAS 63-37-6 (1243)  
Cytidine-5'-monophosphoric acid, Cytidilic acid;  
-----

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

Al+++ gl KCl 25°C 0.20M C K1=6.08 B2=9.7 1996AKa (67248) 655  
B(A1HL)=9.0



B(AlH-1L)=0.39

\*\*\*\*\*

C9H14O7P2 H2L CAS 445253-97-4 (8732)  
[(Dimethoxyphosphinyl)hydroxyphenylmethyl]phosphoric acid;

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

Al+++ gl KNO3 25°C 0.10M C B2=12.21 2002GKc (67375) 656  
B(AlH-3L)=-11.91  
B(AlHL2)=16.30  
B(AlH-1L2)=6.06  
B(AlH-2L2)=-0.78

\*\*\*\*\*

C9H18N2O4 H2L CAS 18992-11-5 (5913)  
N,N-Dihydroxynonanediarnide; HN(OH).CO.(CH2)7.CO.NH(OH)

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

Al+++ gl NaNO3 25°C 0.10M C K1=15.55 1989EHa (67937) 657

\*\*\*\*\*

C9H24N3O9P3 H6L NOTPH CAS 83843-39-3 (224)  
1,4,7-Triazacyclononane-N,N',N''-tris(methylenephosphonic acid);

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

Al+++ gl KNO3 25°C 1.00M U K1=18.6 1990BSd (68310) 658  
K(Al+HL)=12.6  
K(Al+H2L)=10.3  
K(Al+H3L)=7.6

\*\*\*\*\*

C10H6O8 H4L Pyromellitic Ac CAS 89-05-4 (519)  
Benzene-1,2,4,5-tetracarboxylic acid; C6H2.(COOH)4

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

Al+++ gl NaCl 25°C 0.10M C K1=4.44 1998NPa (68507) 659  
B(AlHL)=8.44  
B(AlH-1L)=-0.25

\*\*\*\*\*

C10H8O5S H2L CAS 16223-97-7 (2392)  
1,2-Dihydroxynaphthalene-4-sulfonic acid;

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

Al+++ gl NaCl 25°C 0.60M C 19830Sb (69806) 660  
B(-2,1,1)=-5.343  
B(-3,1,1)=-11.24  
B(-4,1,2)=-13.115  
B(-5,1,2)=-21.15

B(p,q,r); pH+qAl+rH2L=HpAlqH2Lr. B(-6,1,3)=-24.47

\*\*\*\*\*

C10H8O5S H3L DHNSA (877)  
2,3-Dihydroxynaphthalene-6-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaClO4	25°C	0.50M	C			K1=15.7 B2=29.1	1985CDa (69834)	661
Al+++	gl	NaNO3	25°C	0.10M	U			K1=16.48 B2=29.82 B3=39.12	1984NHa (69835)	662
Al+++	gl	NaClO4	25°C	0.50M	C			K1=15.10 B2=27.88 B3=37.47	1976LAe (69836)	663

\*\*\*\*\*

C10H8O8S2 H4L Chromotropic ac CAS 148-25-4 (1875)  
1,8-Dihydroxynaphthalene-3,6-disulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.10M	U			K1=17.18 B2=30.10	1990HWa (69920)	664
Al+++	gl	NaClO4	25°C	0.50M	C			K1=12.9 B2=22.5	1985CDa (69921)	665
Al+++	kin	NaClO4	25°C	0.50M	C				1981BMg (69922)	666

K(Al+H2L=AlL+2H)=-2.82

Method: stopped-flow.

Al+++	gl	KNO3	20°C	0.10M	U			K1=17.1 B2=29.80	1969HBb (69923)	667
Al+++	gl	NaClO4	30°C	0.20M	U			K1=17.16 B2=30.41	1967AMa (69924)	668
Al+++	con	KNO3	?	0.10M	U			K1=17.22	1965DMa (69925)	669

By glass electrode: K1=17.40, K2=16.86

Al+++	gl	oth/un	25°C	0.01M	U				1957JAc (69926)	670
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K(Al+H2L=AlL+2H)=-3.87

\*\*\*\*\*

C10H9NO HL 8-OH-Quinaldine CAS 826-81-3 (998)  
2-Methyl-8-hydroxyquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	alc/w	?	100%	U			K1=8?	19620Ba (70043)	671

Medium: EtOH

\*\*\*\*\*

C10H9NO HL CAS 5541-67-3 (999)  
5-Methyl-8-hydroxyquinoline;

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

Al+++ gl diox/w 25°C 50% U B2=20.52 1978THc (70063) 672  
 B3=30.53  
 B(AlHL)=15.08  
 B(AlHL2)=25.24

\*\*\*\*\*  
 C10H9NO3S H2L CAS 49608-51-7 (8280)  
 4,5-Dihydro-2-(2-hydroxyphenyl)-4-thiazolecarboxylic acid,  
 Deazademethyl-desferrithiocin;

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

Al+++ sp alc/w 25°C 75% C 2000LTb (70167) 673  
 K(Al+H2L=AlL+2H)=3.38

Medium: 75% v/v MeOH/H2O, 0.10 M NaClO4.  
 By fluorescence, K(Al+H2L=AlL+2H)=3.26

-----  
 Al+++ gl KNO3 25°C 0.10M C K1=12.22 B2=22.82 1990ARa (70168) 674

\*\*\*\*\*  
 C10H10N2O3S H2L CAS 76045-30-2 (7218)  
 Desferriferrithiocin,  
 2-(3-Hydroxypyridin-2-yl)-4-methyl-4,5-dihydrothiazole-4-carboxylic acid;

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

Al+++ sp KCl 25°C 0.10M C B2=23.6 1996LHa (70558) 675  
 K(AlL2+H)=6.6  
 K(AlHL2+H)=3.3

-----  
 Al+++ gl KNO3 25°C 0.10M C B2=22.2 1990ARa (70559) 676

\*\*\*\*\*  
 C10H13NO4 HL CAS 137528-47-3 (8725)  
 1-(3'-Carboxypropyl)-2-methyl-3-hydroxy-4-pyridinone;

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

Al+++ gl KNO3 25°C 0.10M C K1=13.03 B2=22.97 2002SGb (71755) 677  
 B3=31.27  
 B(AlHL2)=27.34  
 B(AlH2L2)=30.26

\*\*\*\*\*  
 C10H14N5O7P H2L AMP-5 CAS 18422-05-4 (842)  
 Adenosine-5'-monophosphoric acid, 5-Adenylic acid;

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

Al+++ gl KCl 25°C 0.20M C K1=6.14 1996AKa (72439) 678  
 B(AlH-1L)=1.90

-----  
 Al+++ gl KCl 25°C 0.20M U K1=6.17 B2=10.35 1991KSb (72440) 679  
 B(AlH-1L)=2.02



K(AlL+F)=4.8  
K(AlL+S)=10.3

-----  
Al+++ gl KNO3 25°C 0.50M C M 1986TBa (73569) 687

K(AlL+H)=2.41  
\*K(AlL)=-5.81  
K(AlL+F)=4.8  
K(Al(OH)L+HS=AlLS)=10.3

-----  
Al+++ gl NaCl 25°C 0.12M C K1=15.3 1981RMb (73570) 688

\*K(AlL)=-5.73  
\*K(AlH-1L)=-9.82

-----  
Al+++ gl KNO3 35°C 0.10M U K1=16.95 1980KHb (73571) 689

-----  
Al+++ vlt oth/un ? 1.08M U K1=15.9 1969SVd (73572) 690  
Medium: K2SO4, pH=2.7

-----  
Al+++ ISE KNO3 25°C 0.10M U K1=16.5 1967ABb (73573) 691

K(Al+HL)=3.4  
K(AlL+OH)=8.0

-----  
Al+++ sp NaClO4 25°C 0.20M U K1=16.01 1967BDb (73574) 692  
By glass electrode: K(AlL+H)=2.63, K(AlLOH+H)=5.87, K(AlL(OH)2+H)=10.31

-----  
Al+++ ISE KNO3 20°C 0.10M U T H T K1=16.7 1966Mca (73575) 693

K(AlL+H)=2.77  
K1=16.84(30 C), 17.26(40 C). DH(K1)=50.2 kJ mol<sup>-1</sup>, DS=489 J K<sup>-1</sup> mol<sup>-1</sup>

-----  
Al+++ dis NaClO4 20°C 0.10M U 1963STc (73576) 694

B(AlL(OH))=25.04

Medium: KClO4

-----  
Al+++ cal KNO3 20°C 0.10M U H 1958SRa (73577) 695  
DH(K1)=52.6 kJ mol<sup>-1</sup>, DS=487 J K<sup>-1</sup> mol<sup>-1</sup>

-----  
Al+++ gl KNO3 15°C 0.10M U K1=16.11 1956STa (73578) 696

K(AlL+H)=2.0  
K(AlLOH+H)=5.16

-----  
Al+++ vlt KNO3 20°C 0.10M U T K1=16.13 1954SGa (73579) 697

K(Al+HL)=8.4  
K(AlLOH+H)=5.89  
K(AlL(OH)2+H)=9.97

\*\*\*\*\*

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

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

Al+++ nmr oth/un 25°C ? U 1994DBa (74697) 698  
K1eff=2.4  
K2eff=2.1

At pH 7.4

-----  
Al+++ gl KCl 25°C 0.20M U K1=7.92 B2=12.47 1991KSb (74698) 699  
B(AlHL)=11.30  
B(AlH-1L)=2.46  
B(AlH-1L2)=4.84

-----  
Al+++ gl NaCl 25°C 0.15M U 1987JVa (74699) 700  
B(AlHL)=12.47

\*\*\*\*\*  
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

-----  
Al+++ gl KNO3 35°C 0.10M U K1=15.68 1980KHb (75329) 701

-----  
Al+++ ISE KNO3 25°C 0.10M U K1=14.4 1967ABb (75330) 702  
K(AlL+H)=2.4  
K(AlL+OH)=9.3

-----  
Al+++ sp NaClO4 25°C 0.20M U K1=13.96 1967BDb (75331) 703  
By glass electrode: K(AlL+H)=2.14, K(AlLOH+H)=4.89, K(AlL(OH)2+H)=9.19

-----  
Al+++ ISE KNO3 20°C 0.10M U T H K1=12.43 1966Mca (75332) 704  
K(AlL+H)=5.08

K1=12.6(30 C),12.9(40 C). DH(K1)=37.6 kJ mol<sup>-1</sup>, DS=372 J K<sup>-1</sup> mol<sup>-1</sup>  
\*\*\*\*\*  
C10H180 L (6695)

4-tert-Butylcyclohexanone;

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

-----  
Al+++ nmr non-aq 25°C 100% U T 1993HMb (75586) 705  
K(Al(OR)3+L)=2.08

Medium: C6D6. At 15 C: K=2.39; 37 C: K=1.81  
\*\*\*\*\*

C10H20N2O4 H2L CAS 5578-84-7 (5914)  
N,N-Dihydroxydecanediamide; HN(OH).CO.(CH2)8.CO.NH(OH)

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

-----  
Al+++ gl NaNO3 25°C 0.10M C K1=15.29 1989EHa (75798) 706

\*\*\*\*\*  
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
Al+++	gl	R4N.X	25°C	0.05M	U		K1=9.3	1999BDb (76306)	707
Medium: Et4NClO4									
*****									
C11H8N6O8S2		H5L					CAS 74385-48-1	(897)	
2-(1H-Tetrazol-5-ylazo)chromotropic acid;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	sp	NaClO4	25°C	0.10M	U		K(Al+H2L=AlL+2H)=-4.16	1982PRa (76949)	708
*****									
C11H8O3		H2L					CAS 92-70-6	(1130)	
2-Hydroxy-3-naphthoic acid (3-Hydroxy-2-naphthoic acid);									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	sp	oth/un	60°C	0.02M	U	TIH	K(Al+HL=AlL+H)=5.42	1967GSf (77112)	709
y=4.55(20 C),4.77(30 C),4.90(40 C),5.18(50 C). DH=-39.7 kJ mol <sup>-1</sup> , DS=217?									
At 20 C: K=4.38(I=0.06),4.26(I=0.09),4.17(I=0.11),4.07(I=0.16),3.97(I=0.21).									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	sp	oth/un	25°C	0.0	U	I	K1=13.38	1966MAh (77113)	710
In KCl: K(Al+HL=AlL+H)=-0.54+4.072sqrtI/(1+2.22sqrtI)-0.03I (?)									
*****									
C11H8O4		HL					CAS 7555-37-5	(4812)	
3-Acetyl-4-hydroxycoumarin									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	diox/w	35°C	50%	U		K1=4.52 B2=8.22	1971MAa (77170)	711
Medium: 50% dioxan, 0.01 M NaClO4									
*****									
C11H8O4		HL					CAS 6724-42-1	(6183)	
8-Formyl-7-hydroxy-4-methyl-2H-1-benzopyran-2-one; CHO.C9H30(:O)(CH3)(OH)									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	alc/w	35°C	70%	U		K1=6.83 B2=12.22	1988KRc (77196)	712
*****									
C11H8O6S		H3L					CAS 66695-90-7	(1996)	
1-Hydroxy-4-sulfo-2-naphthoic acid;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaClO4	25°C	0.50M	C		K1=12.64 B2=21.89	1988LKa (77219)	713
B(AlH-1L2)=13.98									
B(AlH-2L2)=5.32									

K1 measured by spectrophotometry

\*\*\*\*\*

C11H806S H3L CAS 6407-91-6 (1994)  
1-Hydroxy-7-sulfo-2-naphthoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl04	25°C	0.50M	C			K1=13.88 B2=23.52 B(AlH-1L2)=15.22 B(AlH-2L2)=6.54	1988LKa (77238)	714

K1 measurd by spectrophotometry

\*\*\*\*\*

C11H806S H3L CAS 15509-36-1 (2658)  
3-Hydroxy-7-sulfo-2-naphthoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	NaCl04	25°C	0.10M	U I			K1=11.934	1980LPf (77247)	715
In 0.1 M KCl: K1=11.316										

\*\*\*\*\*

C11H807S H4L CAS 6407-90-5 (2683)  
1,7-Dihydroxy-4-sulfo-2-naphthoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl04	25°C	0.50M	C			K1=14.95 B2=22.14 B3=28.21 B(AlHL)=30.80 B(AlHL)=20.00	1982LAa (77262)	716
Al+++	gl	NaCl04	25°C	0.50M	C			K1=14.92 B2=22.14 B3=28.21 B(AlHL)=20.00 B(AlHL2)=30.80	1982LKc (77263)	717

\*\*\*\*\*

C11H807S H4L CAS 6470-93-5 (8345)  
3,5-Dihydroxy-7-sulfo-2-naphthoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl04	25°C	0.50M	C			K1=16.00 B2=24.09 B3=30.85 B(AlHL)=20.65 B(AlHL2)=32.44	1982LAa (77268)	718

\*\*\*\*\*

C11H809S2 H4L CAS 67097-84-1 (1995)  
1-Hydroxy-4,7-disulfo-2-naphthoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl04	25°C	0.50M	C			K1=12.38 B2=21.55	1988LKa (77274)	719



B(AlH-1L2)=13.66

K1 measured by spectrophotometry

\*\*\*\*\*

C11H8O9S2 H4L CAS 67097-83-0 (1618)

3-Hydroxy-5,7-disulfo-2-naphthoic acid;

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

Al+++ gl NaClO4 25°C 0.50M C K1=10.81 B2=19.26 1978LAa (77293) 720

\*\*\*\*\*

C11H9NO2 HL CAS 92609-55-3 (4827)

5-Acetyl-8-hydroxyquinoline;

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

Al+++ gl diox/w 25°C 60% U 1973SCd (77327) 721

B3=26.64

Medium: 60% dioxan, 0.1 M NaClO4

\*\*\*\*\*

C11H9NO4 H2L CAS 4321-82-7 (4829)

3-Acetyl-4-hydroxycoumarin oxime;

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

Al+++ gl diox/w 35°C 50% U 1971MAa (77412) 722

K(Al+HL)=4.32

K(Al+2HL)=7.69

Medium: 50% dioxan, 0.01 M NaClO4

\*\*\*\*\*

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  
-----

Al+++ vlt NaClO4 25°C 0.10M U 1975TBc (77526) 723

K(Al+2HL)=23.52

-----  
Al+++ sp NaClO4 20°C 0.10M U K1=11.5 1967SNb (77527) 724

\*\*\*\*\*

C11H10N2O6S H3L (7533)

7-(2-Carboxymethyl)amino-8-hydroxyquinoline-5-sulfonic acid; H00CCH2NHC9H4N(OH)HSO3

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

Al+++ gl NaNO3 25°C 0.10M M K1=11.23 B2=22.17 1996SOa (77682) 725

K(Al+HL)=10.52

K(Al+2HL)=21.17

\*\*\*\*\*

C11H11NO6 H3L CAS 1147-65-5 (425)

N-(2'-Carboxyphenyl)iminodiethanoic acid; H00C.C6H4.N(CH2.COOH)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un 25°C dil U 1970DPb (77821) 726  
K(Al+HL)=4.60 at pH 3

\*\*\*\*\*  
C11H14N2O3 HL Gly-Phe CAS 3321-03-7 (829)  
Glycyl-phenylalanine; H2N.CH2.CO.NH.CH(CH2.C6H5).COOH  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 35°C 0.10M U M 1980KHb (78811) 727  
B(AlL(tripolyphosphate))=4.33

\*\*\*\*\*  
C11H15N04 HL CAS 480436-59-7 (8726)  
1-(4'-Carboxybutyl)-2-methyl-3-hydroxy-4-pyridinone;  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 25°C 0.10M C K1=13.23 B2=23.41 2002SGb (79035) 728  
B3=31.60

B(AlHL2)=27.76  
B(AlH2L2)=30.69  
-----

\*\*\*\*\*  
C11H17N206P HL (5908)  
3(((3-Hydroxy-2,5-dimethyl-4-pyridinyl)methylene)amino)-3-phosphonopropanoic acid;  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 1.00M C K1=18.68 B2=25.10 1989MSb (79186) 729  
K(AlL+H)=4.86

K(AlHL+H)=3.23  
-----

\*\*\*\*\*  
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  
-----  
Al+++ gl KNO3 20°C 0.10M U K1=16.33 1964LAa (79420) 730  
By polarography: K1=16.31

\*\*\*\*\*  
C11H18N2O9 H4L HDPTA CAS 3148-72-9 (431)  
1,3-Diamino-2-hydroxypropane-N,N,N',N'-tetraethanoic acid;  
-----

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KNO3 25°C 0.10M U K1=15.2 1971KRa (79540) 731  
K(Al(OH)L+H)=6.70

K(Al(OH)2L+H)=8.70  
B(Al2L)=16.6  
-----



```

-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Al+++     gl  NaNO3  25°C 0.10M M          K1=11.88 B2=22.34 1996S0a (81106) 737
                                         K(Al+HL)=10.91
                                         K(Al+2HL)=21.20

```

\*\*\*\*\*

```

C12H13NO3          HL          (1054)
4-Dimethylamino-benzylidenepyruvic acid; (CH3)2N.C6H4.CH:CH.CO.COOH

```

```

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

```

```

Al+++     sp  NaClO4 25°C 0.50M C          K1=2.563      1984MTa (81191) 738

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\*\*\*\*\*

```

C12H14N4O2S          L      Sulfadimidine  CAS 57-68-1 (6167)
2-(4-Aminobenzolsulfamido)-4,6-dimethylpyrimidine;

```

```

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

```

```

Al+++     gl  alc/w  25°C 50% C          K1=8.55  B2=15.00 1999GAa (81366) 739
Medium: 50% EtOH/H2O, 0.10 M NaNO3.

```

\*\*\*\*\*

```

C12H14O14          H6L          CAS 111451-17-3 (5895)
3,6-Dioxaoctane-1,2,4,5,7,8-hexacarboxylic acid; (CH2(COOH).CH(COOH).O.CH(COOH)-)2

```

```

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

```

```

Al+++     gl  KCl    25°C 0.10M C          K1=8.56      1989MMd (81415) 740

```

```

                                         K(AlL+H)=5.73
                                         K(AlHL+H)=3.23
                                         K(AlL+Al)=1.2
                                         K(AlH-1L+H)=4.95

```

```

B(Al2H-1L)=10.96

```

\*\*\*\*\*

```

C12H17N3O10          H4L      Asp-Asp-Asp          (6445)
Aspartyl-aspartyl-aspartic acid;

```

```

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

```

```

Al+++     gl  KCl    25°C 0.20M C          K1=8.45      2003KFa (81735) 741

```

```

                                         B(AlHL)=12.33
                                         B(AlH2L)=15.51
                                         B(AlH-1L)=3.00

```

\*\*\*\*\*

```

C12H18N2O5S          H2L          CAS 80459-15-0 (1595)
2-Nitroso-5-(N-propyl-3-sulfopropylamino)phenol;

```

```

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

```

```

Al+++     gl  KNO3   25°C 0.10M C          K1=7.47  B2=14.41 1988YSc (81805) 742

```

\*\*\*\*\*

C12H19NO2 HL (5890)  
3-Hydroxy-2-methyl-1-hexylpyridin-4-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.15M	C			K1=11.51 B2=22.49 B3=31.71	1989CNa (81976)	743

\*\*\*\*\*

C12H20N2O8 H4L BDTA CAS 868-43-9 (1742)  
DL-2,3-Diaminobutane-N,N,N',N'-tetraethanoic acid;  
(HOOC.CH2)2N.CH(CH3).CH(CH3).N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	oth	KNO3	20°C	0.10M	U			K1=18.5	1965JMb (82282)	744

Method: electrophoresis

\*\*\*\*\*

C12H20N2O8 H4L CAS 22968-57-6 (3992)  
meso-2,3-Diaminobutane-N,N,N',N'-tetraethanoic acid;  
(HOOC.CH2)2N.CH(CH3).CH(CH3).N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	oth	KNO3	20°C	0.10M	U			K1=16.5	1965JMb (82383)	745

Method: electrophoresis

\*\*\*\*\*

C12H22O12 HL Lactobionic acid CAS 96-82-2 (2487)  
4-O-Beta-D-Galactopyranosyl-D-gluconic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.10M	C			B(AlH-3L)=-11.98	1995E0a (82927)	746

\*\*\*\*\*

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
Al+++	gl	R4N.X	25°C	0.05M	U			K1=9.4	1999BDb (83812)	747

Medium: Et4NC104

\*\*\*\*\*

C12H26O4S HL SDS CAS 151-21-3 (2522)  
Dodecyl sulfate; CH3(CH2)11.OSO3H

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	dis	NaNO3	25°C	0.10M	C	M		Kout(AlA+L=AlAL)=1.95	1994BSb (83979)	748

At pH 6.88. A=Ferrioxamine B.

\*\*\*\*\*

C12H27N3O3 L (6685)

1,3,5-Trideoxy-1,3,5-tris(dimethylamino)-cis-inositol;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C K1=14.23 B2=26.25 1995HKb (84067) 749  
B(AlHL2)=30.50

Other models also considered., e.g. K1=14.21, B2=26.23, B(AlH-1L)=8.71

-----  
Al+++ gl KCl 25°C 0.10M C K1=16.74 B2=30.25 1995HKb (84068) 750  
B(AlHL2)=34.37

Other models also considered., e.g. K1=16.62, B2=30.22, B(AlH-1L)12.53

-----  
Al+++ gl KCl 25°C 0.10M U K1=14.3 B2=26.4 1992KHa (84069) 751  
B(AlH-1L)=8.9  
B(AlHL2)=30.6

\*\*\*\*\*

C13H8O3 HL CAS 719-41-5 (3397)

1-Hydroxyxanthone (1-Hydroxy-9-xanthenone)

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp alc/w 25°C 50% U K1=10.37 1968GDb (84494) 752

Medium: 50% EtOH, 0.1 M NaClO4

\*\*\*\*\*

C13H9NO3 H2L (6878)

2-Hydroxy-1-carbazole carboxylic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un 25°C ? U 1993TPa (84596) 753  
K(Al+HL=AlL+H)=0.97  
K(AlLOH+H)=6.2  
K(AlL(OH)2+2H)=11.9  
K(Al2LOH+3H=AlL+Al)=11.8

K(Al3L(OH)4+4H=AlL+2Al)=12.7. Method: fluorescence spectroscopy

\*\*\*\*\*

C13H9N3O3 HL TAN CAS 1147-56-4 (4030)

1-(1',3'-Thiazol-2'-ylazo)-2-hydroxynaphthalene;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ vlt NaClO4 25°C 0.10M U B2=14.28 1975TBc (84614) 754

\*\*\*\*\*

C13H9N3O8S3 H3L CAS 28467-51-8 (898)

2-(2-Thiazolylazo)chromotropic acid;

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

-----  
Al+++ sp NaClO4 25°C 0.10M U 1982PRa (84663) 755  
K(A1+H2L=A1L+2H)=-2.70

\*\*\*\*\*  
C13H10N2O4 HL CAS 13245-57-3 (4983)  
N-4-Nitrobenzoyl-N-phenylhydroxylamine; O2N.C6H4.CO.N(C6H5)OH  
-----

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

Al+++ gl mixed 30°C 50% U K1=8.27 B2=15.89 1971GSc (84882) 756  
K3=6.73

Medium: 50% v/v acetone/H2O, 0.5 M NaClO4

\*\*\*\*\*  
C13H10N2O4 HL CAS 2029-61-0 (178)  
N-Phenyl-2-nitrobenzohydroxamic acid; O2N.C6H4.CO.N(C6H5).OH  
-----

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

Al+++ gl mixed 30°C 50% U K1=6.60 B2=14.07 1971GSc (84895) 757  
K3=6.73

Medium: 50% v/v acetone/H2O, 0.5 M NaClO4

\*\*\*\*\*  
C13H10N2O4 HL CAS 17120-18-2 (220)  
N-Phenyl-3-nitrobenzohydroxamic acid; O2N.C6H4.CO.N(C6H5).OH  
-----

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

Al+++ gl mixed 30°C 50% U K1=8.32 B2=16.07 1971GSc (84907) 758  
K3=6.77

Medium: 50% v/v acetone/H2O, 0.5 M NaClO4

\*\*\*\*\*  
C13H11N L 3-Stilbazole (6869)  
(3-Pyridyl)styrene; C5H4N.CH:CH.C6H5  
-----

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

Al+++ sp non-aq 25°C 100% U M 1993IWa (85006) 759  
K(A1ACl+L)=-2.54 (L is trans)  
K(A1ACl+L)=-2.62 (L is cis)

Medium:Dichloroethane. H2A:Tetraphenylporphyrin

\*\*\*\*\*  
C13H11N L 4-Stilbazole (6868)  
(4-Pyridyl)styrene; C5H4N.CH:CH.C6H5  
-----

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

Al+++ sp non-aq 25°C 100% U M 1993IWa (85007) 760  
K(A1ACl+L)-1.98 (L is trans)  
K(A1ACl+L)=-1.98 (L is cis)

Medium:Dichloroethane. H2A:Tetraphenylporphyrin

\*\*\*\*\*

C13H11NO2 HL CAS 304-88-1 (181)  
N-Phenylbenzohydroxamic acid; C6H5.CO.N(C6H5).OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	diox/w	25°C	50%	U			K1=9.65 B2=19.31 B3=27.81	1972GDb (85136)	761

Medium: 50% dioxan, 0.25 M NaClO4

Al+++	gl	mixed	30°C	50%	U			K1=8.98 B2=17.01 K3=7.52	1971GSc (85137)	762
-------	----	-------	------	-----	---	--	--	--------------------------------	-----------------	-----

Medium: 50% v/v acetone, 0.5 M NaClO4

\*\*\*\*\*

C13H11NO5 HL Oxolinic acid CAS 14698-29-4 (2755)  
1-Ethyl-6,7-dioxymethylene-quinoline-4-one-3-carboxylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	25°C	0.05M	C			K1eff=6.39	2000MPa (85217)	763

Medium: 0.05 M chloroethanoate buffer, pH=3.0. Method: spectrofluorimetry.

\*\*\*\*\*

C13H11NO5S H2L CAS 23117-22-8 (6287)  
N-Benzoyl-4-hydroxylaminobenzene sulfonic acid; C6H5.CO.N(OH).C6H4HSO3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	30°C	0.50M	U			K1=6.98 B2=13.50 B3=18.88	1976GMc (85220)	764

\*\*\*\*\*

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	mixed	25°C	50%	C			K2=5.5	2002Mwa (85286)	765

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

\*\*\*\*\*

C14H8O7S H3L DASA CAS 83-61-4 (950)  
1,2-Dihydroxyanthraquinone-3-sulfonic acid, Alizarin Red S;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C				2002A0a (86709)	766

B(-2,1,1)=-2.550

B(-4,1,2)=-5.236

B(-10,2,4)=-22.77

B(p,q,r) defined for the deprotonated ligand H2L-: pH+qAl+rH2L=HpAlq(H2L)r



B(-2,1,1) determined by spectrophotometry.

Al+++	gl	NaClO4	25°C	0.10M	M	T	K1=14.11	B2=26.69	1989COa (86710)	767
Al+++	gl	oth/un	25°C	0.00	U				1988RCa (86711)	768
							B(AlH2L2)=12.88			
Al+++	sp	NaClO4	20°C	0.10M	M		K1=14.11	B2=26.92	1987COa (86712)	769
							B(Al(OH)L2)=34.1			
Al+++	EMF	oth/un	?	0.10M	U		K1=11.31	B2=17.37	1972GBc (86713)	770
Al+++	sp	NaClO4	rt	0.10M	U				1971NOc (86714)	771
							K(Al+2H2L)=11.5			
Al+++	sp	oth/un	25°C	0.10M	U				1968BNa (86715)	772
							K(Al+2HL)=12.06			

\*\*\*\*\*

C14H807S H3L (4037)  
 1,4-Dihydroxyanthraquinone-2-sulfonic acid, quinizarin-2-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KNO3	25°C	0.05M	C			K1=9.04 B(AlH-1L)=4.33 B(AlH-2L)=-1.47 B(Al2H-1L)=8.89 B(Al2H-3L)=0.80	1993PFa (86777)	773

\*\*\*\*\*

C14H10N02F3 HL CAS 530-28-9 (2574)  
 N-(3-Trifluoromethylphenyl)-2-aminobenzoic acid; HOOC(C6H4)NH(C6H4)CF3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	mixed	22°C	90%	U			K1=5.95	1982GKb (86896)	774
		Medium: 90% DMF/H2O								

\*\*\*\*\*

C14H1007S H5L CAS 30782-99-1 (5045)  
 1,2,5,10-Tetrahydroxyanthracene-3-sulfonic acid (Leucoalizarin red S)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	NaClO4	?	0.10M	U			K(Al+H3L)=7.9 K(Al+H4L)=6.3	1971NPb (86934)	775

\*\*\*\*\*

C14H11N508S2 H5L CAS 1105-53-9 (5084)  
 1,5-Bis(2-hydroxy-5-sulfophenyl)-3-cyanoformazan;

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

-----  
Al+++ gl NaNO3 20°C 0.10M U K1=16.40 1971SEa (87017) 776  
\*\*\*\*\*

C14H1102NF2S HL CAS 51679-49-3 (2928)  
N-((3-Difluoromethylthio)phenyl)anthranilic acid;HOOC(C6H4).NH.(C6H4).S.CHF2  
-----

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

Al+++ gl mixed 22°C 90% U K1=6.32 1982GKb (87026) 777  
Medium: 90% DMF/H2O  
\*\*\*\*\*

C14H1102NF2S HL CAS 51679-50-4 (2929)  
N-((4-Difluoromethylthio)phenyl)anthranilic acid;HOOC(C6H4).NH.(C6H4).S.CHF2  
-----

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

Al+++ gl mixed 22°C 90% U K1=6.12 1982GKb (87031) 778  
Medium: 90% DMF/H2O  
\*\*\*\*\*

C14H16N2O5S H2L CAS 390426-77-4 (8803)  
1-n-Butyl-5-sulfo-8-hydroxyquinoline-7-carboxamide;  
-----

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

Al+++ sp NaClO4 25°C 0.01M C K1=8.4 B2=16.20 2001LAa (87905) 779  
Medium: 0.01 M HClO4. Method: spectrophotometric titration.  
\*\*\*\*\*

C14H17N5O3 HL Pipemidic acid CAS 51940-44-4 (2535)  
8-Ethyl-5,8-dihydro-5-oxo-2-(1-piperazinyl)pyrido[2,3-d]pyrimidine-6-carboxylic  
acid;  
-----

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

Al+++ sp oth/un 25°C 0.05M U K1eff=6.07 2000MPa (88055) 780  
Medium: 0.05 M chloroethanoate, pH=5.5. Method: spectrofluorimetry.  
For Cinoxacin, K1eff=5.601-Ethyl-3-carboxy-6,7-methylenedioxy-4-cinnolone  
\*\*\*\*\*

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  
-----

Al+++ gl KNO3 35°C 0.10M U K1=19.18 1980KHb (88572) 781  
-----

Al+++ ISE KNO3 25°C 0.10M U K1=18.9 1967ABb (88573) 782  
K(Al+HL)=3.4  
K(Al+OH)=6.3  
-----

Al+++ sp NaClO4 25°C 0.20M U K1=18.50 1967BAc (88574) 783  
-----

By glass electrode: K(AlL+H)=2.29, K(AlL(OH)+H)=7.82

-----  
Al+++ ISE KNO3 20°C 0.10M U T H K1=18.63 1966Mca (88575) 784  
K(AlL+H)=2.59  
K1=18.8(30 C),19.15(40 C); DH(K1)=-46.0 kJ mol-1, DS=510 J K-1 mol-1  
-----

Al+++ dis NaClO4 20°C 0.10M U 1963STc (88576) 785  
B(AlL(OH))=26.61  
Medium: KClO4  
-----

Al+++ vlt KNO3 20°C 0.10M U K1=17.63 1954SGa (88577) 786  
K(AlLOH+H)=7.58  
K(AlL+H)=3.93  
-----

\*\*\*\*\*  
C14H23N3O8 H4L NODASA CAS 210217-93-9 (8716)  
1,4,7-Triazacyclononane-1-succinic acid-4,7-diethanoic acid;  
-----

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ nmr oth/un 20°C 0.12M C K1=18.50 2002AMb (89008) 787  
Medium: 0.02 M Al(NO3)3, pH 2.0. Method: 27Al nmr.  
-----

\*\*\*\*\*  
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  
-----  
Al+++ ISE KNO3 25°C 0.10M C M 1996YHa (89144) 788  
K(AlL+H)=5.18  
K(AlHL+F)=5.3  
K(AlL+F)=2.9  
-----

Method: Fluoride ISE.  
-----

Al+++ gl KNO3 35°C 0.10M U K1=20.66 1980KHb (89145) 789  
-----

Al+++ ISE KNO3 25°C 0.10M U K1=18.7 1967ABb (89146) 790  
K(Al+HL)=4.3  
K(AlL+OH)=6.6  
-----

Al+++ ISE KNO3 20°C 0.10M U T H K1=18.4 1966Mca (89147) 791  
K(AlL+H)=4.63  
-----

K1=18.51(25 C),18.62(30 C),18.80(40 C). At 25 C: DH(K1)=33 kJ mol-1, DS=472  
-----

\*\*\*\*\*  
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  
-----  
Al+++ gl NaClO4 25°C 0.20M U K1=13.90 1967BDb (89837) 792  
K(AlL+H)=3.97  
-----

K(AlLOH+H)=5.20  
K(AlL(OH)2+H)=8.42

K1 by spectrophotometry

\*\*\*\*\*

C14H25N3O7 H3L (5397)  
1-Oxa-4,7,10-triazacyclododecane-4,7,10-triethanoic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C K1=12.5 1993DSa (90079) 793  
K(AlL+H)=3.28

\*\*\*\*\*

C14H28N2O4 L Cryptand 2,1,1 CAS 31250-06-3 (836)  
1,10-Diaza-4,7,13,18-tetraoxabicyclo[8,5,5]eicosane (2,1,1);

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl R4N.X 25°C 0.05M U K1=12.9 1999BDb (90345) 794  
Medium: Et4NClO4

\*\*\*\*\*

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  
-----  
Al+++ sp oth/un 25°C 0.10M U B3=11.91 1978KIa (90946) 795

\*\*\*\*\*

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  
-----  
Al+++ kin KNO3 25°C 0.10M C K1=23.3 1996PKa (90952) 796

\*\*\*\*\*

C15H10O7 H5L Quercetin CAS 117-39-5 (5101)  
3,5,7-Trihydroxy-2-(3',4'-dihydroxyphenyl)-1-benzopyran-4-one;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp non-aq 25°C 100M C K1eff=-2.34 2001ADb (91020) 797

Medium: MeOH, 0.2 M acetate buffer, pH 5.0. K1eff: Al+HnL=AlL

\*\*\*\*\*

C15H10O10S H5L CAS 141896-20-0 (8182)  
2-(3,4-Dihydroxyphenyl)-3,5-dihydroxy-7-(sulphooxy)-4H-1-benzopyran-4-one,  
Quercetin-7-sulfonic;

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

-----  
Al+++ sp non-aq 25°C 100M C 2001ADb (91028) 798  
K1eff=-1.73

Medium: MeOH, 0.2 M acetate buffer, pH 5.0. K1eff: Al+HnL=All

\*\*\*\*\*

C15H10O10S H5L Quercetin S F CAS 25001-18-7 (1520)  
3,5,7,3',4'-Pentahydroxy-5'-sulfoflavone; (HO)3(O)C9H20.C6H2(SO3H)(OH)2

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

Al+++ sp NaClO4 20°C 0.10M U K1=5.11 1989K0a (91031) 799

-----  
Al+++ sp NaClO4 20°C 0.10M U 1976KTb (91032) 800

B(AlH4L)=7.56  
B(Al2H2L)=20.9

\*\*\*\*\*

C15H11NO2 H2L (430)  
2-(2'-Hydroxyphenyl)-8-hydroxyquinoline; HO.C6H4.C9H5N.OH

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

Al+++ gl diox/w 25°C 50% U K1=19.8 B2=34.70 1974CCb (91056) 801

\*\*\*\*\*

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  
-----

Al+++ vlt NaClO4 25°C 0.10M U B2=21.90 1975TBc (91206) 802

-----  
Al+++ vlt alc/w 25°C 50% U K1=12.86 1973TBa (91207) 803

Medium: 50% EtOH, 0.06 M (H/Na)ClO4

\*\*\*\*\*

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  
-----

Al+++ sp oth/un 25°C 0.10M U K1=4.37 1978KIa (91266) 804

\*\*\*\*\*

C15H11N3O4S H2L (5130)  
7-Phenylazo-8-hydroxyquinoline-5-sulfonic acid;

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

Al+++ sp NaNO3 25°C 0.10M C K1=7.53 1995S0a (91334) 805

\*\*\*\*\*

C15H11N3O5S H3L CAS 111248-75-0 (8411)  
5-(2'-Hydroxy-5'-phenylazo)-8-quinolinol;

-----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	RT	dil	C			K1eff=6.73 B2eff=11.20 B3eff=15.64	1985IBa (91340)	806

Medium: Britton and Robinson buffer, pH 6.6  
 \*\*\*\*\*  
 C15H11O3Cl H2L CAS 654637-45-3 (9237)  
 7,8-Dihydroxyflavylum chloride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	none	25°C	0.0	C			K1=9.11	2003MMA (91401)	807

\*\*\*\*\*  
 C15H11O5Cl H4L Luteolinidin CAS 1154-78-5 (9239)  
 2-(3,4-Dihydroxyphenyl)-5,7-dihydroxy-1-benzopyrilium chloride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	none	25°C	0.0	C			K1=6.81	2003MMA (91403)	808

\*\*\*\*\*  
 C15H12O2 HL CAS 1214-47-7 (951)  
 3-Phenyl-1-(2'-hydroxyphenyl)-2-propen-1-one, 2'-hydroxychalkone;  
 C6H5.CH:CH.CO.C6H4.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	diox/w	30°C	60%	U			K1=11.35 B2=21.05	1975KKc (91576)	809

\*\*\*\*\*  
 C15H14O6 H4L Catechin CAS 154-23-4 (2737)  
 3,3',4',5,7-Pentahydroxyflavone; (HO)3(O)C9H6O.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			K(A1+H4L=A1H2L+2H)=-5.57 K(A1H2L=A1H2L(OH)+H)=-5.76 K(A1H2L+H4L=A1(H2L)2+2H)=-8.3	2002IIb (91815)	810

For (-)-epicatechin, K(A1+H4L=A1H2L+2H)=-5.75, K(A1H2L=A1H2L(OH)+H)=-6.0,  
 K(A1H2L+H4L=A1(H2L)2+2H)=-8.2.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaClO4	25°C	0.50M	C			K1=18.3 K(A1+HL)=12.4	1985CDa (91816)	811

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			K(A1+H2L)=17.10 K(A1H2L+H2L)=13.89 K(A1(H2L)2+H2L)=9.93 K(A1(OH)H2L+H)=5.98	1985KPa (91817)	812

$K(\text{Al}(\text{H}_2\text{L})_2=\text{Al}(\text{OH})(\text{H}_2\text{L})_2+\text{H})=-8.22$ . For the epicatechin dimer H8L constants for  $\text{AlH}_6\text{L}$ ,  $\text{Al}(\text{H}_6\text{L})_2$  and  $\text{Al}(\text{OH})\text{H}_6\text{L}$  given in Austral. J Chem., (1985) 38, 879

\*\*\*\*\*  
 C15H14O7 H5L CAS 970-73-0 (1796)  
 Epigallocatechin;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			2002IIb (91819)	813
							$K(\text{Al}+\text{H}_5\text{L}=\text{AlH}_3\text{L}+2\text{H})=-5.75$		
							$K(\text{AlH}_3\text{L}=\text{AlH}_3\text{L}(\text{OH})+\text{H})=-5.23$		
							$K(\text{AlH}_3\text{L}+\text{H}_5\text{L}=\text{Al}(\text{H}_3\text{L})_2+2\text{H})=-7.16$		

\*\*\*\*\*  
 C15H15NO2 HL CAS 61-68-7 (2927)  
 N-(2,3-Dimethylphenyl)anthranilic acid;  $\text{HOOC}(\text{C}_6\text{H}_4).\text{NH}(\text{C}_6\text{H}_3)(\text{CH}_3)_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	mixed	22°C	90%	U		$K_1=6.56$	1982GKb (91829)	814
Medium: 90% DMF/H2O									

\*\*\*\*\*  
 C16H11N2O5ClS HL (7535)  
 2-[(2-Hydroxy-5-chlorophenyl)azo]-1-hydroxynaphthalene-4-sulfonic acid;  
 $\text{HO.C}_6\text{H}_3\text{ClN}=\text{NC}_1\text{O}_5\text{N}(\text{OH})\text{HSO}_3$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	kin	KNO3	25°C	0.10M	C		$K_1=15.26$	1996PKa (92769)	815

\*\*\*\*\*  
 C16H11N3O6S H3L (1047)  
 7-(4-Carboxyphenylazo)-8-hydroxyquinoline-5-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	sp	NaCl	25°C	0.10M	U		$K_1=9.86$ $B_2=16.84$	1984OFa (92850)	816

\*\*\*\*\*  
 C16H11N3O7S H3L CAS 116946-37-3 (1598)  
 7-Hydroxy-((4-carboxyphenyl)azo)-8-hydroxy-5-quinolinesulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaCl	22°C	0.10M	C		$K_1=7.49$	1988BEa (92852)	817

\*\*\*\*\*  
 C16H11N3O10S2 H4L Chromotrope 2B CAS 548-80-1 (896)  
 2-((4-Nitrophenyl)azo)chromotropic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	sp	NaClO4	25°C	0.10M	U			1982PRa (92861)	818
							$K(\text{Al}+\text{H}_2\text{L}=\text{AlL}+2\text{H})=-4.70$		

\*\*\*\*\*

C16H12N2O5S H3L SolochromeVio R CAS 94205-83-1 (4093)  
1-(2'-Hydroxy-5'-sulfophenylazo)-2-naphthol;

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

Al+++ sp oth/un 25°C 0.0 U K1=18.4 B2=31.6 1962CRa (93021) 819

\*\*\*\*\*

C16H12N2O8S2 H4L Chromotrope 2R CAS 4197-07-3 (2604)  
2-(Benzeneazo)-chromotropic acid, Acid Red 29

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

Al+++ gl NaClO4 25°C 0.10M U K1=16.70 B2=25.70 1975MPa (93059) 820

-----  
Al+++ gl KCl 20°C 0.10M U K1=18.41 1964PCa (93060) 821

\*\*\*\*\*

C16H12N2O11S3 H5L CAS 548-81-2 (5180)  
2-(4'-Sulfophenylazo)chromotropic acid,  
2-(4-sulfophenylazo)-1,8-dihydroxyaphthalene-3,6-diHSO3

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

Al+++ gl NaClO4 25°C 0.10M U K1=10.00 B2=13.80 1975MPa (93091) 822

\*\*\*\*\*

C16H13N2O10AsS2 H5L Thorin I CAS 3688-92-4 (2609)  
1-((2-Arsonophenyl)azo)-2-hydroxy-3,6-naphthalylldisulfonic acid;

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

Al+++ sp oth/un 25°C ? U 1968GSe (93184) 823

K(?)=10.5

\*\*\*\*\*

C16H13N3O7S H4L (1596)  
8-Hydroxy-7-((2-hydroxy-5-carboxyphenyl)azo)-5-quinoline sulfonic acid;

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

Al+++ sp NaCl 22°C 0.10M C K1=14.15 1988BEa (93287) 824

\*\*\*\*\*

C16H13O3Cl H2L CAS 125653-94-3 (9238)  
7,8-Dihydroxy-4-methylflavylium chloride;

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

Al+++ sp none 25°C 0.0 C K1=8.30 2003MMa (93393) 825

\*\*\*\*\*

C16H13O5Cl H3L (261)  
3',4',7-Trihydroxy-3-methoxyflavylium chloride; (HO)2C6H3.C9H4O(OH)(OCH3)Cl

-----



Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	none	25°C	0.00	U				1997EFa (93396)	826
									K(Al+H2L=AlL+2H)=-4.04	

Al+++	sp	NaCl	25°C	0.50M	U				1994DEa (93397)	827
									K(Al+HL=AlL+H)=0.36	
									K(Al+H2L=AlL+2H)=-4.04	

For the hemiacetal, K(Al+H2L=AlL+2H)=-6.39.

\*\*\*\*\*

C16H14N2O HL CAS 38214-71-0 (8453)  
 3-(2-Hydroxy-5-methylphenyl)-5-phenylpyrazole;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	diox/w	27°C	70%	C			K1=10.75 B2=21.05 K3=9.50	1994SNa (93418)	828

Medium: 70% v/v dioxane/H2O, 0.10 M NaClO4.

\*\*\*\*\*

C16H16N2O2 HL (5159)  
 4-Hydroxyphenacylidene-4-dimethylaminoaniline; HOC6H4COCH:NC6H4N(CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	alc/w	28°C	100%	U			K(Al+2HL)=8.59	1970GGa (93660)	829

Medium: MeOH

\*\*\*\*\*

C16H18N2O5S HL Penicillin V CAS 87-08-1 (943)  
 Phenoxyethylpenicillinic acid, 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KNO3	25°C	0.10M	M T H			K1=8.20 B2=13.20	1983SBc (93814)	830
Also data for 35 C. DH(B2)=1.1 kJ mol <sup>-1</sup> , DS(B2)=253 J K <sup>-1</sup> mol <sup>-1</sup> .										

\*\*\*\*\*

C16H18N3O3F HL Norfloxacin CAS 70458-96-7 (7141)  
 1-Ethyl-6-fluoro-1,4-dihydro-4-oxo-7[1-piperazinyl]-3-quinoline carboxylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	oth/un	25°C	0.10M	C			K1=8.83 B(AlHL)=14.60 K(Al+L=AlL(OH)3+3H)=-14.85	1995DJa (93827)	831

Medium: LiCl

\*\*\*\*\*

C16H18O9 HL Chlorogenic acid CAS 327-97-9 (2844)  
 3-(3',4'-Dihydroxycinnamoyl)-1,3,4,5-tetrahydrocyclohexane carboxylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.10M	C			2002A0a (93898)	832
							B(-2,1,1)=-3.91 B(-3,1,1)=-8.17 B(-4,1,1)=-13.79 B(-6,1,2)=-19.28		

B(-7,1,2)=-27.65, B(-9,1,3)=-34.01.

B(p,q,r): pH+qAl+rH3L=HpAlq(H3L)r

\*\*\*\*\*

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
Al+++	gl	R4N.X	25°C	0.05M	C	M	K1=9.0 B(AlHL)=13.1 B(AlH2L)=17.3	1998TSb (94490)	833

Medium: 0.05 M Et4NClO4. Also ternary complexes, MAlH-nL, where M=Na, K, Cs, Ca, Sr, Ba.

\*\*\*\*\*

C16H28N4O8 H4L DOTA CAS 60239-18-1 (1017)

1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.20M	C		K1=17.0	1995KKa (94876)	834

\*\*\*\*\*

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
Al+++	gl	R4N.X	25°C	0.05M	U		K1=11.3	1999BDb (95175)	835

Medium: Et4NClO4

\*\*\*\*\*

C17H14N2O7S H4L (1597)

4-Hydroxy-((2-hydroxy-5-carboxyphenyl)azo)-naphthalenesulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaCl	22°C	0.10M	C		K1=15.27	1988BEa (95936)	836

\*\*\*\*\*

C17H16N2O2 HL CAS 65840-98-4 (8454)

3-(2-Hydroxy-5-methoxyphenyl)-5-(4-methoxyphenyl)pyrazole;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	diox/w	27°C	70%	C		K1=10.55 B2=20.80 K3=7.45	1994SNa (96027)	837

Medium: 70% v/v dioxane/H2O, 0.10 M NaClO4.

\*\*\*\*\*

C17H18N3O3F HL Ciprofloxacin CAS 189257-90-7 (7142)  
1-Cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7[1-piperazinyl]-3-quinoline carboxylic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.20M C 1996TBc (96223) 838  
B(AlH2L2)=29.33  
B(AlH2L3)=35.8  
B(AlH3L3)=43.26

\*\*\*\*\*

C18H20N2O6 H4L CAS 10328-28-6 (3501)  
Ethylenedinitrilo-N,N'-bis(2'-hydroxyphenyl)-N,N'-diethanoic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C K1=25.78 1993MMa (97393) 839  
K(AlL+H)=3.73

\*\*\*\*\*

C18H20N2O6 H4L EHPG CAS 10328-28-6 (429)  
N,N'-Ethylene-bis-(2-(2'-hydroxyphenyl))glycine; (HOOCCH(C6H4OH)NHCH2.)2

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un 25°C 0.10M C 2003YFc (97420) 840  
K1eff=9.38

Method: UV difference spectrophotometry. Medium: 0.10 M HEPES, pH 7.4.

-----  
Al+++ gl NaCl 25°C 0.12M C K1=24.48 1981RMb (97421) 841

\*\*\*\*\*

C18H20N3O4F HL Ofloxacin CAS 82419-36-1 (7789)  
a-Fluoro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-2,3-dihydro-7H-pyrido-1,4-benzoxazine-6-COOH;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C I K1=10.37 2001DJa (97453) 842  
B(AlHL)=16.40

Medium: 0.10 M LiCl, 0.001 M Triton. In 0.10 M LiCl, 0.005 M CTAB,  
K1=11.56, B(Al2H-2L)=3.6.

\*\*\*\*\*

C18H22N4O4 H2L CAS 2444-14-6 (3502)  
N,N'-Bis(2-pyridylmethyl)diaminoethane-N,N'-diethanoic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl 25°C 0.16M C K1=10.85 1997CRa (97539) 843  
K(Al+L=AlL(OH)+H)=6.37

K(Al(OH)+H=Al)=4.48

\*\*\*\*\*

C18H26N2O6P2 H4L CAS 53431-86-0 (5266)  
Ethylenebis(imino(2-hydroxyphenyl)methylene(methyl)phosphinic acid);

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ EMF oth/un ? ? U K1=20.0 1970DMc (97673) 844  
K(Al+HL)=15.36

\*\*\*\*\*

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  
-----  
Al+++ gl R4N.X 25°C 0.10M C K1=20.23 1998ACc (98007) 845  
K(Al+H)=5.97  
K(Al+Al)=9.55  
K(Al2L(OH)+H)=4.68  
K(Al2L(OH)2+2H)=9.87

Medium: N(CH3)4NO3.

-----  
Al+++ ISE KNO3 25°C 0.10M C M K(Al+H)=5.94

Method: Fluoride ISE.

-----  
Al+++ gl KNO3 35°C 0.10M U K1=18.74 1980KHb (98009) 847

-----  
Al+++ gl KNO3 25°C 0.10M U K1=19.7 1970HAa (98010) 848  
K(Al+H)=5.85  
K(Al2L+2OH)=15.9

By ion-selective electrode (Hg): B(Al2L)=28.6. By redox: B(Al2L)=28.9

\*\*\*\*\*

C18H32N4O8 H4L TETA CAS 60239-22-7 (1019)  
1,4,8,11-Tetraazacyclotetradecane-1,4,8,11-tetraethanoic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaNO3 25°C 0.20M C K1=16.3 1995KKa (98188) 849

\*\*\*\*\*

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;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl R4N.X 25°C 0.05M U K1=10.6 1999BDb (98513) 850

Medium: Et4NClO4

\*\*\*\*\*

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

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un 25°C ? U 1968GSa (98997) 851

K(?)=5.0

\*\*\*\*\*

C19H12O9Br2S H6L Bromo Pyrog.Red CAS 16574-43-9 (706)  
5',5"-Dibromopyrogallolsulfonephthalein;

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

Al+++ sp oth/un 20°C 0.05M U 1970BLb (99010) 852

K(Al+H4L)=5.03

\*\*\*\*\*

C19H13N3O7S2 H3L Naphthylazoxine CAS 56932-43-5 (276)  
8-Hydroxy-7-(6'-sulfo-2'-naphthylazo)-quinoline-5-sulfonic acid;

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

Al+++ sp NaCl 25°C 0.10M U K1=7.88 1982H0a (99056) 853

\*\*\*\*\*

C19H13N3O11S3 H5L CAS 37469-13-9 (1883)  
8-Hydroxy-7((8'-hydroxy-3',6'-disulfo-1'-naphthyl)azo)quinole-5-sulfonic acid;

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

Al+++ sp NaCl 25°C 0.10M U K1=16.03 1983I0a (99058) 854

\*\*\*\*\*

C19H14O7S H4L Pyrocatechol Vi CAS 369596-29-2 (709)  
Pyrocatechol Violet,  
3-[3,4-Dihydroxyphenyl-3-hydroxy-4-oxo-2,5-cyclohexadien-1-ylidenemethyl-b.;

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

Al+++ gl KCl 25°C 0.10M C 1995SSa (99101) 855

B(-1,1,1)=-0.23

B(-2,1,2)=-1.02

B(-3,1,3)=-2.57

B(-4,1,2)=-10.21

B(p,q,r): pH+qAl+r(H3L-). B(-5,1,3)=-13.03, B(-6,1,3)=-21.10, B(-7,1,3)=-30.46, B(-8,1,3)=-40.75, B(-9,1,3)=-52.0, B(-6,3,3)=-5.07, B(-16,6,6)=-23.2

-----  
Al+++ sp KCl 25°C 0.50M U 1974CMc (99102) 856

K(Al+H3L=AlH2L+H)=0.12

K(AlH2L+H3L=AlH3L2+2H)=-6.10

K(AlH3L2+H2L=AlH4L3+H)=-1.87

K(2Al+H3L=Al2HL+2H)=-0.23

K(Al+H2L)=7.9, K(Al+H2L+HL)=19.4, K(Al+H2L+2HL)=27.3, K(2Al+HL)=17.3

Ligand: Pyrocatechol sulfophthalein  
-----

Al+++ gl KCl 25°C 0.20M U K1=25.12 B2=47.39 1970G0a (99103) 857  
K3=20.74

\*\*\*\*\*  
C19H15N L (6870)  
(4-Phenyl-3-pyridyl)styrene;

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

Al+++ sp non-aq 25°C 100% U M 1993IWa (99120) 858  
K(AlACl+L)=-2.02 (L is trans)  
K(AlACl+L)=-2.52 (L is cis)

Medium:Dichloroethane. H2A:Tetraphenylporphyrin

\*\*\*\*\*  
C19H15N08 H4L Alizarin Comp. CAS 3952-78-1 (671)  
(3,4-Dihydroxy-2-anthraquinonyl-methyl)iminodiethanoic acid;

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

Al+++ sp diox/w 20% U 1973INa (99129) 859  
K(Al+HL)=14.3  
B(Al2L)=25.3

Medium: 20% dioxan, 0.1 M

\*\*\*\*\*  
C19H19N706 H3L Folic acid CAS 75708-92-8 (194)  
Pteroylglutamic acid;

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

Al+++ gl KNO3 30°C 0.10M U I K1=4.65 B2=8.85 1970NDa (99283) 860  
K3=4.10

I=0: K1=5.80, K2=4.70, K3=4.65. I=0.01: K1=5.25, K2=4.55, K3=4.50.

I=0.05: K1=4.80, K2=4.28, K3=4.15

\*\*\*\*\*  
C19H39N706 H3L TETMAHA (7468)  
1,4,8,11-Tetraazacyclotetradecane-N,N',N''-tris(N-methylacetohydroxamic acid);

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

Al+++ gl KNO3 25°C 0.10M C K1=21.02 1999GGa (99501) 861  
B(AlHL)=30.72  
B(AlH2L)=35.60  
B(AlH3L)=40.71  
B(AlH4L)=44.17

\*\*\*\*\*  
C20H11N09S2 H3L CAS 65501-73-7 (8982)  
6-Hydroxy-5-dibenzo[a,j]phenoxazone-8,11-disulfonic acid;

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

Al+++ sp KCl RT 1.0M C 1980NLa (99533) 862

$$K(A1+HL=A1L+H)=-0.39$$

At pH 5-6.5,  $K_{1eff}=4.77$ . Data for solutions with Septonex and cetylpyridinium surfactants

\*\*\*\*\*

C20H13N3O7S H3L Eriochrome B1 T CAS 1787-61-7 (997)  
1-(1-Hydroxy-2-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	20°C	0.10M	U				1980PKa (99559)	863

$$K(A1+2HL)=12.51$$

Medium: Na2SO4

-----

Al+++ gl NaClO4 25°C 0.10M U K1=9.56 B2=13.66 1975MPa (99560) 864

\*\*\*\*\*

C20H14N2O5S H3L Solochrome 6B CAS 3564-14-5 (3507)  
1-(1-Hydroxy-2-naphthylazo)-2-naphthol-4-sulfonic acid, Mordant Black3, Eriochrome blue-black B;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaClO4	25°C	0.10M	U				1975MPa (99644)	865

-----

Al+++ gl NaClO4 25°C 0.10M U K1=11.58 B2=20.97 1975MPa (99644) 865

\*\*\*\*\*

C20H14N2O5S H3L EriochrBluBlk R CAS 2538-85-4 (3508)  
3-Hydroxy-4-(2-hydroxy-1-naphthylazo)naphthalene-1-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	25°C	0.10M	U				1967NNc (99686)	866

$$K(A1+2HL)=41.97$$

$$K(A1OH+2HL)=40.62$$

\*\*\*\*\*

C20H24N2O6 H4L HBED CAS 3625-89-6 (2208)  
N,N'-Di-(2-hydroxybenzyl)-diaminoethane-N,N'-diethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	25°C	0.10M	C				2003YFc (99987)	867

$$K_{1eff}=8.88$$

Method: UV difference spectrophotometry. Medium: 0.10 M HEPES, pH 7.4.

-----

Al+++ gl NaCl 25°C 0.12M C K1=24.78 1981RMb (99988) 868

\*\*\*\*\*

C20H35N5O10 H5L (6545)  
1,4,7,10,13-Pentaazacyclopentadecane-N,N',N'',N''',N''''-pentaethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.20M	C				1995Kka (100531)	869

-----

Al+++ gl NaNO3 25°C 0.20M C K1=16.1 1995Kka (100531) 869

\*\*\*\*\*

C21H21012 H5L CAS 50986-17-9 (7770)  
3-O-beta-D-Glucopyranosyldelphinidin ion;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp none 25°C 0.00 U 1997EFa (101191) 870  
K(Al+H2L=AlL+2H)=-3.53  
\*\*\*\*\*

C21H22010 L G-Rubrofusarin CAS 63174-98-1 (7067)  
2-Methyl-5,6-dihydroxy-6-O-B-D-galactosyl-8-methoxy-naphtho-pyrone;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp NaClO4 25°C 1.00M C K1=8.91 1995PDa (101213) 871  
\*\*\*\*\*

C22H1409 H5L CAS 4431-00-9 (3513)  
Aurintricarboxylic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un ? ? U K1=16.6 1972PKa (101491) 872  
\*\*\*\*\*

C22H18N4O14As2S2 H8L Arsenazo III CAS 1668-00-4 (1148)  
2,7-Bis(2'-arsonophenylazo)chromotropic acid;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp oth/un 25°C 0.10M U 1975MIa (101609) 873  
K(Al+H4L=AlH2L+2H)=-1.17  
K(AlOH+H5L=Al(OH)H3L+2H)=0.47  
\*\*\*\*\*

C22H18011 H8L CAS 989-51-5 (2270)  
Epigallocatechin gallate;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl KCl 25°C 0.10M C 2002IIb (101680) 874  
K(Al+H8L=AlH6L+2H)=-4.47  
K(AlH6L=AlH5L(OH)+H)=-4.74  
\*\*\*\*\*

C22H23N2O8Cl H2L Aureomycin CAS 56235-18-8 (3515)  
Chlorotetracycline;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl oth/un 20°C 0.01M U K1=7.2 1956ARd (101758) 875  
\*\*\*\*\*

C22H24N2O8 H2L Tetracycline CAS 60-54-8 (2201)  
Tetracycline;

-----



Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.10M	C		K1=12.5	1992GAa (101807)	876

Al+++	gl	oth/un	20°C	0.01M	U		K1=7.4 B2=13.80 K3=5.4	1956ARd (101808)	877
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\*\*\*\*\*  
 C22H24N2O9                    H2L    Oxotetracycline    CAS 79-57-2    (2202)  
 Oxytetracycline, 5-Hydroxy-tetracycline;

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

Al+++	gl	oth/un	20°C	0.01M	U		K1=7.0	1956ARd (101881)	878
-------	----	--------	------	-------	---	--	--------	------------------	-----

\*\*\*\*\*  
 C22H31N5O6                    H2L                                    CAS 813432-03-0    (9200)  
 Imino-bis(acetyl(1-(3'-aminopropyl)-3-hydroxy-2-methyl-4-pyridinone);

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

Al+++	gl	KNO3	25°C	0.10M	C		K1=20.35 B(A1HL)=25.37 B(A1H2L)=27.71 B(A1H3L)=30.44 B(A12L3)=60.18	2004SGc (102190)	879
-------	----	------	------	-------	---	--	---	------------------	-----

B(A12HL3)=66.21, B(A12H2L3)=71.72, B(A12H3L3)=76.46, B(A12H-2L2)=32.05  
 \*\*\*\*\*

C23H16O9Cl2S                    H4L    Chrome azuro1 S    CAS 1667-99-8    (711)  
 Chromazuro1 S;

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

Al+++	sp	KCl	25°C	0.10M	C	I		1995HPa (102539)	880
-------	----	-----	------	-------	---	---	--	------------------	-----

K(A1L+HL=A1L+H)=2.01  
 K(3A1+2HL=A13L2+2H)=12.29  
 K(2A1+2HL=A12HL2+H)=12.92  
 At I=0.60M (KCl): K(A1+HL=A1L+H)=1.80; K(3A1+2HL=A13L2+2H)=11.99  
 K(4A1+2HL=A14H-2L2+4H)=7.45

Al+++	sp	oth/un	?	?	U		B2=12.85 K(A1+2HL)=6.82	1969TKb (102540)	881
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Al+++	sp	KCl	30°C	0.20M	U		K1=4.32	1963SDh (102541)	882
-------	----	-----	------	-------	---	--	---------	------------------	-----

\*\*\*\*\*  
 C23H18O9S                    H2L    ECR                                    (7200)  
 3''-Sulfo-3,3'-dimethyl-4-hydroxyfuchson-5,5'-dicarboxylic acid

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

Al+++	sp	KCl	25°C	0.10M	C		B(A1-HL)=1.75	1996HKa (102619)	883
-------	----	-----	------	-------	---	--	---------------	------------------	-----

B(A13-H2L2)=13.44  
 B(A14-H3L5)=29.07  
 B(A14-H4L5)=25.30

B(A11-HL) determined by spectrophotometry, the other values by potentiometry  
 B(A14-H5L5)=20.67 species formed at higher alkali addition rate.

\*\*\*\*\*

C23H1809S H4L Eriochrome cyan CAS 3564-18-9 (433)  
 4'-Hydroxy-3,3'-dimethyl-2''-sulfofuchsone-5,5'-dicarboxylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	25°C	0.10M	U			K1=13.66 B(A1HL)=18.25 B(A1H2L)=22.29	1975EPa (102625)	884

Al+++	sp	R4N.X	25°C	0.10M	U			K(A1+H2L=A1HL+H)=1.9 K(A1HL+2HL)=8.1	1973NNb (102626)	885
-------	----	-------	------	-------	---	--	--	---	------------------	-----

Medium: (Na,NH4)Cl

\*\*\*\*\*

C24H29N3O12S3 H6L (7355)  
 1,2,3-Tris((2-hydroxy-5-sulfobenzyl)amino)propane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaCl	25°C	0.16M	C			K1=22.8	1997COa (103014)	886

C24H42N6O12 H6L (6546)  
 1,4,7,10,13,16-Hexaazacyclooctadecane-N,N',N'',N''',N''',N''''-hexaethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	NaNO3	25°C	0.20M	C			K1=22.09	1995KKa (103370)	887

C25H2009 H5L CAS 2947-64-0 (4166)  
 4',3''-Dihydroxy-3,3',4''-trimethylfuchsone-5,5',5''-tricarboxylic acid, Chromoxane violet R

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	?	0.10M	U			K1=10.42	1967LMf (103603)	888

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	KCl	25°C	0.20M	C			K1=23.9 B(A1HL)=33.8 B(A1H2L)=36.6	2000FEc (103800)	889



acid);

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl NaCl04 25°C 0.10M C K1=39.97 2002BBd (104479) 895  
B(AlHL)=46.27  
B(AlH3L)=54.79

K1 by spectrophotometry using competitive reaction with edta, pH 7.2.

\*\*\*\*\*  
C27H30016 H4L Rutin CAS 153-18-4 (4169)  
3,3',4',5,7-Pentahydroxyflavone-3-beta-rutinoside;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp non-aq 25°C 100M C K1eff=-1.92 2001ADb (104505) 896

Medium: MeOH, 0.2 M acetate buffer, pH 5.95. K1eff: Al+HnL=All

\*\*\*\*\*  
C27H31016Cl H3L Cyanin CAS 2611-67-8 (9240)  
2-(3,4-Dihydroxyphenyl)-3,5-bis(beta-D-glucopyranosyloxy)-7-hydroxy-1-benzopyrilium  
chloride;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp none 25°C 0.0 C K1=6.74 2003MMa (104512) 897

\*\*\*\*\*  
C27H440 L Vitamin D3 CAS 67-97-0 (6103)  
7-Dehydrocholesterol, Cholecalciferol

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ gl alc/w 25°C 70% C K1=12.4 B2=24.40 2003MYc (104613) 898  
Medium: 70% v/v EtOH/H2O, 0.10 M KNO3.

\*\*\*\*\*  
C30H27N3O15 H6L Enterobactin CAS 28384-96-5 (2259)  
Enterobactin; cyclo-((OH)C6H3(OH).CO.NH.CH.CO.CH2)3

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ sp KCl 25°C 0.10M C K(All+H)=5.15 1991LRa (105189) 899  
K(AlHL+H)=3.4  
K(AlH3L+H)=2.6

\*\*\*\*\*  
C30H45N4O6P3 H3L CAS 182250-11-9 (8686)  
Tris(4-(phenylphosphinato)-3-methyl-3-azabutyl)amine;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
Al+++ nmr NaCl 25°C 0.16M C 1996LRc (105321) 900



\*\*\*\*\*

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
Al+++	sp	oth/un	25°C	0.10M	C			K1eff=6.84 K2eff=6.61	1997ASa (106583)	907

Medium: 0.10 M acetate buffer, pH 5.0.

Al+++	gl	NaCl04	25°C	0.10M	U			B(AlHL)=29.14 B(Al2L)=26.8	1982MYa (106584)	908
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Al+++	sp	NaCl04	22°C	1.0M	U				1967LMg (106585)	909
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K(2Al+2H4L=AlH3L+AlH4L+H)=3.88(?),  
K(2Al+4H4L=Al(H3L)2+Al(H4L)2+2H)=6.02(?)

\*\*\*\*\*

C40H47N3O10 H7L CAS 86728-01-0 (5503)  
Bis(3-(((2-hydroxy-5-methylbenzyl)amino)methyl)-2-hydroxy-5-methylbenzyl)amine-trie  
thanoic acid

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	gl	oth/un	25°C	0.10M	U			K1=15.29 K(AlH-1L+H)=6.19 K(AlH-2L+H)=8.23 K(AlH-3L+H)=10.02 K(AlL+H)=3.05	1983YMa (106785)	910

\*\*\*\*\*

Polymer Fulvic acid (1523)  
Fulvic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	oth/un	22°C	?	U	H		K1eff=4.6 (type I site) K2eff=3.5 (type I site)	1993LMd (108176)	911

pH=3.5; method: Synchronous scan fluorescence spectroscopy. Fulvic acid from  
northern coniferous forest. K=5.0 and 4.2 (type II site); 5.3 (type III)

\*\*\*\*\*

Polymer L (3532)  
Human transferrin;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Al+++	sp	KN03	25°C	0.10M	C			Keff(Al+HCO3L)=13.72 Keff(Al+AlHCO3L)=12.72	1994HCa (108204)	912

$$K_{\text{eff}}(\text{Al}+\text{L})=7.6$$

At pH 7.4 in 0.1M N-(2-hydroxyethyl)piperazine-N'-2-ethanesulfonic acid, (HEPES) and 5mM HCO<sub>3</sub>

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Al+++ sp oth/un 25°C 0.10M U 1990HSb (108205) 913

$$K_{\text{eff}}(\text{Al}+\text{L})=13.5$$

$$K_{\text{eff}}(\text{AlL}+\text{L})=12.5$$

Medium: 0.1 M N-(2-Hydroxyethyl)piperazine-N'-ethanesulfonic acid and 5 mM NaHCO<sub>3</sub>, pH 7.4.

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Al+++ sp oth/un 25°C 0.10M U 1987MSc (108206) 914

$$K_{\text{1eff}}=12.9$$

$$K_{\text{1eff}}=12.3$$

Medium: 0.1 M Tris buffer, pH 7.4; 0.027 M HCO<sub>3</sub><sup>-</sup>. By competition with the Al-NTA complex.

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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

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