SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 128 experiments for
 (no ligands specified)
 2 metals : Sb(V), Sb+++
 (no references specified)
 (no experimental details specified)

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

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb(V) oth none 25°C 0.0 U 1952LAb (922) 1
  K=22.7(692 mV?)
K: 0.5Sb2O5(s)+2H+2e=0.5Sb2O3(s)+H2O. From thermodynamic data
---
Sb(V) EMF oth/un 25°C 6.0M U I 1949BSa (923) 2
  K=27.66(818 mV)
Medium: HCl. K: Sb+2e=Sb(III). K=26.51(4.5 M;784 mV), 25.22(3.5 M;746 mV)

Sb(V) EMF oth/un 20°C 10.0M U I 1923GSa (924) 3
  K=-20.3(-589 mV)
Medium: KOH. K: Sb+2e=Sb(III). K=-19.3(7.5 M;-561 mV),-17.7(5 M;-516 mV),
-14.7(3 M;-428 mV)
****
Cl- HL Chloride CAS 7647-01-0 (50)
Chloride;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb(V) oth oth/un 25°C 0.0 C K1=0.34 1975AAc (5672) 4
Method: use of Zr-PO4 as competitive cation-exchanger for 124Sb.
Medium: 0.01-4.0 M HCl.

Sb(V) dis oth/un 25°C var U 1972CMd (5673) 5
  K((C6H5)3Sb+L)=2
  K((C6H5)3SbL+L)=0.5

Sb(V) EMF non-aq 25°C 100% U 1971DTb (5674) 6
  K6=5.45
Medium: SeOCl2, 0.5 M Et4NClO4

Sb(V) dis oth/un 0.0 U 1965DIa (5675) 7
  K(SbL3(OH)3+H+L)=-3.07
  K(SbL4(OH)2+H+L)=-3.46
  K(SbL5(OH)+H+L)=-4.28

Sb(V) dis oth/un ? 0.0 U 1963IDa (5676) 8

```
                                        K((SbOL)3+SbOL)=-3.22
                                        K((SbOL)4+SbOL)=-3.48
                                        K((SbOL)5+SbOL)=-4.06
--------------------------------------------------------------------------------
Sb(V)      ISE non-aq   ?  100%  U                      1959BGf  (5677)   9
                                        K(SbL3OPL3=SbL6+POL2)=-5.4
Medium: POCl3
--------------------------------------------------------------------------------
Sb(V)      sp  oth/un 25°C  9.0M U                      1956NRa  (5678)  10
Medium: LiCl. K(SbL5OH+H+Cl=SbL6+H2O)=-4.34 (or -4.65 ?)
--------------------------------------------------------------------------------
Sb(V)      sp  oth/un 26°C  var  U                      1954NEa  (5679)  11
Medium:HCl. K(SbL4(OH)2+H+L=SbL5OH+H2O)=-3.43, K(SbL5OH+H+Cl=SbL6+H2O)=-4.65
********************************************************************************
ClO4-                  HL    Perchlorate      CAS 7001-90-3  (287)
Perchlorate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      cal oth/un 25°C  dil  U   H                  1972CJa  (6375)  12
                                        Kso(Ph4SbL(s)=Ph4Sb+L)=-7.46
DH(Kso)=48.1 kJ mol-1, DS(Kso)=21 J K-1 mol-1
********************************************************************************
F-                     HL    Fluoride         CAS 7644-39-3  (201)
Fluoride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      dis oth/un 25°C  var  U                      1972CMd  (7140)  13
                                        K((C6H5)3Sb+F)=4
                                        K((C6H5)3SbF+F)=3
--------------------------------------------------------------------------------
Sb(V)      con non-aq 25°C 100%  U                      1965TBa  (7141)  14
                                        K(HSbF5X+HX=SbF5X+H2X)=-2.43
                                        K(2HSbF5X=Sb2F10X+H2X)=-2.15
                                        K(Sb2F4X7+2HX=2SbF2X4+H2X)=-2
Medium: liquid HSO3F. HX=HSO3F
--------------------------------------------------------------------------------
Sb(V)      sol non-aq  0°C 100%  U                      1961CKa  (7142)  15
                                        K(KSbF6(s)=K+SbF6)=-1.23
                                        K(TlSbF6(s)=Tl+SbF6)=-3.56
Medium: liquid HF, I=0 corr.
--------------------------------------------------------------------------------
Sb(V)      oth non-aq   ?  100%  U                      1961HQa  (7143)  16
                                        K(2HF+SbF5=H2F+SbF6)=-1.14
                                        K(H2F+SbF6)=2.23
Method; ir. Medium: liquid HF
********************************************************************************
H2O                     L    Water            CAS 7732-18-5  (6115)
Water
```

```
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      cal non-aq 25°C 100%  U   H                  1967OLa  (7611)  17
Medium: C2H4Cl2.  DH(SbCl5+H2O)=-101.6 kJ mol-1 in C2H4Cl2(l)
********************************************************************************
I-                    HL    Iodide           CAS 10034-85-2  (20)
Iodide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      dis oth/un 25°C  var  U                      1972CMd  (8371)  18
                                       K((C6H5)3Sb+L)=1.5
                                       K((C6H5)3SbL+L)=-0.4
********************************************************************************
OH-                   HL    Hydroxide          (57)
Hydroxide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      dis oth/un 25°C       U                      1972CMe (12088)  19
                                       K(R3SbF2+OH=R3SbOHF+F)=7.5
                                       K(R3SbCl2+OH=R3SbOHCl+Cl)=9.5
                                       K(R3SbI2+OH=R3SbOHI+I)=10
R=C6H5
--------------------------------------------------------------------------------
Sb(V)      dis oth/un 25°C       U                      1972CMe (12089)  20
                                       K(R3SbOHF+OH=R3Sb(OH)2+F)=5
                                       K(R3SbOHCl+OH=R3Sb(OH)2+Cl)=7.5
                                       K(R3SbOHI+OH=R3Sb(OH)2+I)=8.5
R=C6H5
********************************************************************************
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
--------------------------------------------------------------------------------
Sb(V)      oth oth/un   ?     ?  U    M                  1972MFb (31345)  21
K(2Sb(OH)3(H-1L)=Sb2(OH)4(H-2L)2)=1.26
********************************************************************************
C13H9OClS              L                     CAS 6028-95-2  (5005)
1-(2-Thienyl)-3-(4'-chlorophenyl)propen-3-one;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb(V)      sp  non-aq   ?  100%  U    M                  1966TLa (84666)  22
                                       K(SbCl5+L)=3.93
Medium: benzene
********************************************************************************
C13H10OS               L                     CAS 3988-77-0  (4979)
```

1-(2'-Thienyl)-3-phenylprop-1-en-3-one; C4H3S.CH:CH.CO.C6H5

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb(V)	sp	non-aq	?	100%	U	M	K(SbCl5+L)=3.18	1966TLa (84969)	23

Medium: 50% dioxan, 0.1 M NaClO4

****

C14H12OS L CAS 6028-90-4 (5051)
3-(4'-Methylphenyl)-1-(2'-thienyl)prop-1-en-3-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb(V)	sp	non-aq	?	100%	U	M	K(SbCl5+L)=3.32	1966TLa (87322)	24

Medium: benzene

****

C14H12O2S L CAS 6028-93-9 (5054)
3-(4'-Methoxyphenyl)-1-(2'-thienyl)prop-1-en-3-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb(V)	sp	non-aq	?	100%	U	M	K(SbCl5+L)=4.02	1966TLa (87335)	25

Medium: benzene

****

C15H14OS L (5112)
3-(4'-Ethylphenyl)-1-(2'-thienyl)prop-1-en-3-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb(V)	sp	non-aq	?	100%	U	M	K(SbCl5+L)=3.91	1966TLa (91767)	26

Medium: benzene.

****

C19H14OS L CAS 40766-17-4 (5273)
3-Biphenyl-1-(2-thienyl)prop-1-en-3-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb(V)	sp	non-aq	?	100%	U	M	K(SbCl5+L)=3.06	1966TLa (99072)	27

Medium: benzene.

****

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	EMF	none	25°C	0.00	U	T		1973VSa (925)	28

K=30.51(150.4mV)
K=Sb4O6(s) + 12H+ + 12e=4Sb(s) + 6H2O. K=32.43(154.5mV,15 C), 28.81(146.8mV, 35 C), 26.03(139.1mV,50 C)

Sb+++ EMF none 25°C 0.00 U 1973VSa (926) 29
K=-32.40(-638.9mV)
K=SbO2- + 2H2O + 3e=Sb(s) + 4OH-

Sb+++ EMF none 25°C 0.00 U T 1972VSa (927) 30
K=10.35(204.0mV)
K=SbO+ + 2H+ + 3e=Sb(s) + H2O. K=11.05(210.5mV,15 C), 9.83(200.3mV,35 C), 9.30(198.8mV,50 C)

Sb+++ EMF none 25°C 0.0 U 1924SCa (928) 31
K=7.71(152 mV)
K: 0.5Sb2O3(s)+3H+3e=Sb(s)+1.5H2O. K(SbO+2H+3e=Sb(s)+H2O)=10.76(212 mV)

Sb+++ EMF oth/un 20°C 10.0M U 1923GSa (929) 32
K=-34.8(-675 mV)
Medium: KOH. K: Sb(OH)4+3e=Sb(s)+4OH ?

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Sb+++	vlt	oth/un	22°C	4.0M	C	I	K1=0.96 B3=1.45 B4=1.04	B2= 1.52	1975BZa (5680)	33

Method: polarography. Medium: NaCl/HCl/HClO4 (total acid = 0.5 M).
For total acid = 4.0 M: B2=3.39, B3=4.09.

Sb+++	vlt	NaClO4	20°C	4.70M	U		K1=1.05 B3=2.20 B4=1.95 B5=1.10	B2=1.90	1975KBb (5681)	34
Sb+++	vlt	NaClO4	30°C	2.0M	U		K1=2.30 B3=5.8 to 6.0 B4=6.8 to 7.2	B2=4.1	1970BWb (5682)	35

Sb+++ EMF oth/un 99°C 100% U 1969BBa (5683) 36
K(2SbL3=SbL2+SbL4)=-7.8
Medium: SbCl3. Method: current-voltage studies

Sb+++ sp non-aq 99°C 100% U 1969BBc (5684) 37
K(SbL3+H2O=SbLO+2HL)=-7.5
Medium: pyridine. Method: also emf and nmr

Sb+++ dis oth/un 290°C 100% U TI 1969JSb (5685) 38

K4=1.6
Medium:K(FeL4). K1=1.6(K(AlL4,289 C); 0.10(K(TlCl4,315 C).Gas chromatography
---
Sb+++ sol oth/un 25°C 4.0M U 1965HEa (5686) 39
Ks((Me4N)3(SbL4)2L)=-4.74
K4=1.0
K5.K6=-0.77
Medium:H2SO4

Sb+++ dis oth/un 15°C 0.50M U 1964IDa (5687) 40
K4=1.4
K5K6=-1.0
Kd(H+SbL4=HSbL4(in org))=0.6
Medium:0.5 H,6.3 Li(NO3). org=C6H13OH or C8H17OH

Sb+++ vlt NaNO3 25°C 4.0M U K1=2.26 B2=3.49 1959PDa (5688) 41
B3=4.18
B4=4.72
B5=4.72
B6=4.11
****
F- HL Fluoride CAS 7644-39-3 (201)
Fluoride;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ vlt NaClO4 30°C 2.0M U K1=3.00 B2=5.70 1970BOc (7144) 42
B3=8.30
B4=10.95

Sb+++ sol KNO3 20°C 0.10M U 1959KGc (7145) 43
*Ks=-0.37
K(Sb(OH)2+F)=5.5
Medium: HNO3, *Ks: 0.5Sb2O3(s)+0.5H2O+HF=Sb(OH)2F
****
I- HL Iodide CAS 10034-85-2 (20)
Iodide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ con non-aq 140°C 100% U 1967BNb (8372) 44
K(SbI2+I)=6.27
Medium: liquid I2
****
OH- HL Hydroxide (57)
Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sol none 80°C 0.0 C T 2003ZSa (12090) 45

```
                                        Kso(valentinite)=-3.69
                                        Kso(senarmonite)=-3.96
Kso: 0.5Sb2O3(s)+1.5H2O=Sb(OH)3.  Data for 15-450 C and 1 to 1000 bar.
-------------------------------------------------------------------------------
Sb+++      sp  NaClO4 25°C 1.00M U        K1=14.60  B2=28.62  1977ANa (12091)  46
                                        B3=41.57
-------------------------------------------------------------------------------
Sb+++      sol NaClO4 25°C 5.00M U                      1974ABb (12092)  47
                                        *Ks=-10.86(orthorombic Sb4O6)
                                        *Ks=-11.71(cubic Sb4O6)
*Ks: Sb4O6(s)+8H=2Sb2(OH)2+2H2O
-------------------------------------------------------------------------------
Sb+++      sol NaClO4 25°C 5.00M U                      1974ABb (12093)  48
                                        *Ks=-12.2(orthorombic Sb4O6)
                                        *Ks=-12.7(cubic Sb4O6)
*Ks: Sb4O6(s)+4H+2H2O=4Sb(OH)2
-------------------------------------------------------------------------------
Sb+++      sol NaClO4 25°C 5.00M U                      1974ABb (12094)  49
                                        *Ks=-13.07
*Ks: Sb4O5(OH)ClO4(H2O)1/2(s)+3H+3/2H2O=4Sb(OH)2+ClO4
-------------------------------------------------------------------------------
Sb+++      sol NaNO3  25°C 5.00M U                      1974ABb (12095)  50
                                        *Ks=-13.46
*Ks: Sb4O4(OH)2(NO3)2(s)+2H+2H2O=4Sb(OH)2+2NO3
-------------------------------------------------------------------------------
Sb+++      sol NaNO3  25°C 5.00M U                      1974ABb (12096)  51
                                        *Ks=-16.89
*Ks: Sb4O4(OH)2(NO3)2(s)+6H=4SbOH+2NO3+2H2O
-------------------------------------------------------------------------------
Sb+++      dis NaClO4 25°C 3.00M U                      1974SMc (12097)  52
                                        *K3=-1.24
-------------------------------------------------------------------------------
Sb+++      sol none   25°C 0.00  U TIH                  1973VSb (12098)  53
                                        Ks=-2.35
Ks(1/4Sb4O6(s)+3/2H2O+OH=Sb(OH)4)=-2.44(15 C), -2.21(35 C), -2.08(50 C);
(DH(Ks)=18.8 kJ mol-1.  In 2 M NaClO4: Ks=-2.22
-------------------------------------------------------------------------------
Sb+++      sp  NaClO4 23°C    ?  U                      1968MGa (12099)  54
                                        *K(SbO+2H2O=Sb(OH)3+H)=-1.42
-------------------------------------------------------------------------------
Sb+++      vlt none   12°C  0.0  U                     1958KOc (12100)  55
                                        Kso(Sb(OH)3)=-41.5
-------------------------------------------------------------------------------
Sb+++      sol none   25°C  0.0  U                     1952GGb (12101)  56
                                        *Ks2=-3.11
                                        Ks3=-4.70
                                        Ks4=-2.06
Ks2: 0.5Sb2O3(s)+1.5H2O=Sb(OH)2+OH); Ks3: 0.5Sb2O3(s)+1.5H2O=Sb(OH)3);
Ks4: 0.5Sb2O3(s)+OH+1.5H2O=Sb(OH)4)
-------------------------------------------------------------------------------
```

```
Sb+++      vlt oth/un   ?   var  U                          1925BAa (12102)  57
                                        Kso=-41.4
--------------------------------------------------------------------------------
Sb+++      sol NaClO4 25°C  var  U                          1924SCa (12103)  58
                                        *K(PbOH+H2O=Pb(OH)2+H)=-3.1
********************************************************************************
S--                   H2L    Sulfide          CAS 7783-06-4  (705)
Sulfide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      oth none   25°C  dil  C T                      1989SRf (14461)  59
                                        K(Sb2S4+H=HSb2S4)=11.50
                                        Ks(Sb2S3+HS=Sb2S4+H)=-14.00
                                        Ks(Sb2S3+HS=HSb2S4)=-2.50
Critical evaluation of literature data for the solubility of Sb2S3 in
sulfide media. Data for 25-300 C.
--------------------------------------------------------------------------------
Sb+++      sol oth/un 25°C  var  M T  M                   1988KRd (14462)  60
                                        K(Sb2S3(s)+H2S=H2Sb2S4)=-5.15
                                        K(Sb2S3(s)+H2S=HSb2S4+H)=-10.1
                                        K(Sb2S3(s)+H2S=Sb2S4+2H)=-19.6
Also K(Sb2S3(s)+2H2O=Sb2S2(OH)2+H2S)=-7.44(200 C). Constants at I=0,25-350 C
--------------------------------------------------------------------------------
Sb+++      sol oth/un 25°C  var  U                        1966ADa (14463)  61
                                        Ks(2Sb2S3(s)+SH+OH=Sb4S7)=0.7
--------------------------------------------------------------------------------
Sb+++      oth none   25°C  0.0  U                       1964PCa (14464)  62
From thermodynamic data. K(0.5Sb2L3(s)+H2O+H=SbO+1.5H2L(g))=-13.9
K(0.5Sb2L3(s)+3H2O=Sb(OH)3+1.5H2L(g))=-14.7
--------------------------------------------------------------------------------
Sb+++      sol oth/un 30°C  var  U                        1962DGc (14465)  63
                                        K(Sb2L3(s)+L=Sb2L4)=2.08
--------------------------------------------------------------------------------
Sb+++      sol oth/un 20°C  var  U                        1956BLa (14466)  64
K(0.5Sb2L3(s)+0.5L=SbL2)=0.45. K(Sb2L3(s)+2OH=SbL2+SbL(OH)2)=-1.10
--------------------------------------------------------------------------------
Sb+++      sol none   25°C  0.0  U                       1953AKa (14467)  65
                                        K(0.5Sb2L3(s)+1.5L=SbL3)=0.89
                                        K(Sb2L3(s)+HL=HSb2L4?)=-2.33
                                        Kso(Sb2L3)=-92.77
I=0 corr. K(0.5Sb2L3(s)+3H+4Cl=SbCl4+1.5H2L)=-12.24
K(0.5Sb2L3(s)+3OH=0.5SbL3+0.5SbO3+1.5H2O)=4.015. Kso from thermodynamic data
********************************************************************************
SO4--                 H2L    Sulfate          CAS 7664-93-9  (15)
Sulfate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  oth/un   ?   var  U                        1970DWa (16530)  66
```

B(SbO+L)=0.3
Medium: 1-4 M H2SO4, K(SbO+2H2L=SbL2+H2O+2H)=-1.0 (10-18 M H2SO4)

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=4.60 B2=9.53	1975WOa (17645)	67

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	cal	oth/un	25°C	3.0M	U	IH	K(SbO+2L)=2.80	1984VRb (17856)	68

in 3 M HClO4; also for 4 M HClO4 K=3.48 DH=-103.43 kJ/mol
for 5 M HClO4 K=4.38 DH=-108.37 kJ/mol

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	sp	NaClO4	25°C	3.00M	U	I	K(SbO+2L)=2.72	1979VSb (17857)	69

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	EMF	alc/w	20°C	100%	U	I	K(Sb+H-1L)=11.85 K(SbH-1L+H-1L)=10.26 K(SbH-2L2+H-1L)=9.07 K(Sb+2L=SbH-2L2+2H) > 1	1971GSa (17898)	70

Medium: MeOH, 1 M LiCl. With 1 M Li tosylate: K(Sb(H-1L)2+H-1L)=12.29;
K(Sb(H-1L)2+Sb(H-1L)3=Sb2(H-1L)5)=2.36

****

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
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=7.00 B2=12.64	1975WOa (20158)	71

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	gl	NaClO4	20°C	0.10M	U	M	K(SbL2=SbL2(OH)+H)=7.58	1970AMa (20363)	72

K(SbL2+3OH=Sb(OH)3+2L)=6.92

****

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
Sb+++	vlt	KCl	30°C	0.10M	C		K1=10.60	1982MNa (21700)	73

Method: polarography. By potentiometry, K(H+L)=9.53

****

C2H6OS HL CAS 60-24-2 (841)

2-Mercaptoethanol; HS.CH2.CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	gl	NaClO4	20°C	0.10M	U			1970AMa (22078)	74

K(SbH-2L2+H)=17.98

****

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
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=10.18 B2=26.52	1975WOa (24543)	75

****

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
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=6.68 B2=11.20	1975WOa (25047)	76

****

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
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=7.84 B2=12.00	1975WOa (25530)	77

****

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
Sb+++	vlt	NaClO4	20°C	0.70M	U		K1=7.78 B2=14.95	1975WOa (29128)	78

****

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

```
--------------------------------------------------------------------------------
Sb+++      vlt NaClO4 20°C 0.70M U        K1=8.70   B2=17.60  1975WOa (30033)  79
********************************************************************************
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
--------------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                      1970AMa (30361)  80
                                       K(SbHL2+H)=2.4
                                       K(SbL2+H)=3.46
                                       K(SbL2+3OH=Sb(OH)3+2L)=5.90
********************************************************************************
C4H6O4S2              H4L                      CAS 2418-14-6  (4264)
2,3-Dimercaptobutanedioic acid; HOOC.CH(SH).CH(SH).COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                      1970AMa (30396)  81
                                       K(SbL=SbLOH+H)=-4.90
                                       K(SbH3L2+H)=2.57
                                       K(SbH2L2+H)=3.60
                                       K(SbHL2+H)=4.61
K(SbL2+H)=6.82; K(2SbLOH+OH=Sb(OH)3+SbL2)=-10.7
********************************************************************************
C4H6O4S2              H4L                      CAS 304-55-2  (3002)
meso-2,3-Dimercaptobutanedioic acid (meso-dithiotartaric acid)
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                      1970AMa (30434)  82
                                       K(Sb2L2=SbLOH+2H)=13.17
                                       K(Sb2L2+6OH=2Sb(OH)3+2L)=9.2
********************************************************************************
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
--------------------------------------------------------------------------------
Sb+++      vlt NaClO4 20°C 0.70M U        K1=8.54   B2=17.18  1975WOa (30715)  83
********************************************************************************
C4H6O6                H2L    DL-Tartaric acd  CAS 133-37-9  (94)
DL-Tartaric acid,DL-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      vlt NaClO4 20°C 0.70M U        K1=8.08   B2=14.81  1975WOa (31029)  84
********************************************************************************
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
--------------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U    M                  1970AMa (31346)  85
K(Sb2(H-2L)2+20H=Sb2(H-2L)OH)=10.16, K(Sb2(H-2L)2+2OH=2Sb(OH)3+2L)=6.07
********************************************************************************
C5H7NO4S2             H3L                     CAS 36061-59-3  (1953)
Bis(carboxymethyl)dithiocarbamic acid; (HOOC.CH2)2.N.CSSH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      EMF KNO3   22°C 1.00M U        K1=8.97   B2=17.61  1970TPb (37560)  86
                                         B3=25.99
********************************************************************************
C5H8O4                H2L    Glutaric acid    CAS 110-94-1  (420)
Pentanedioic acid; HOOC.CH2.CH2.CH2.COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      vlt NaClO4 20°C 0.70M U        K1=9.48   B2=18.78  1975WOa (38350)  87
********************************************************************************
C5H11NS2               HL                      CAS 147-84-2  (2126)
Diethyldithiocarbamic acid; (CH3.CH2)2N.CSSH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  non-aq   ?  100%  U    M                  1968SRg (41369)  88
                                       K(SbAL+2HL=SbL3+H2A)=2.47
Medium: CCl4.  H2A=dithizone
********************************************************************************
C6H5ClO3               HL    Chlorokojic ac   CAS 7559-81-1  (8317)
2-Chloromethyl-5-hydroxy-4H-pyran-4-one;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      vlt KCl    30°C 0.10M C        B2=18.3        1985KNa (42337)  89
Method: polarography
********************************************************************************
C6H6O2                H2L    Catechol         CAS 120-80-9  (534)
1,2-Dihydroxybenzene, pyrocatechol; HO.C6H4.OH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                       1970AMa (43818)  90
                                       K(SbL2+H=SbLOH+H2L)=2.37
                                       K(SbL2+OH=Sb(OH)3+2HL)=-5.44
********************************************************************************
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
-------------------------------------------------------------------------
Sb+++      vlt KCl    30°C 0.10M C        B2=21.3        1985KNa (44100)  91
Method: polarography
*************************************************************************
C6H6O4                 HL    Kojic acid       CAS 501-30-4  (1800)
5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      vlt KCl    30°C 0.10M C        B2=19.7        1985KNa (44241)  92
Method: polarography
*************************************************************************
C6H6O8S2               H4L    Tiron            CAS 149-45-1  (104)
4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)2.C6H2(SO3H)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      gl  KNO3   25°C 0.10M U  I     K2=14.5        1971OBb (44486)  93
                                        K(SbL2+H)=2.00
                                        K(SbL+H2L=SbL2+2H)=-5.73
Medium: 0.1 M KCl: K(SbL+H2L=SbL2+2H)=-6.01
-------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                       1970AMa (44487)  94
                                        K(SbL2+H=SbLOH+H2L)=1.23
                                        K(SbL2+OH=Sb(OH)3+2HL)=-3.95
*************************************************************************
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
-------------------------------------------------------------------------
Sb+++      vlt NaCl   25°C  4.0M C   H    K1=11.66       1984GSd (47006)  95
Method: polarography. Medium pH 2.2. DH(K1)=-31.9 kJ mol-1;
DS(K1)=117 J K-1 mol-1.
*************************************************************************
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
-------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                       1970AMa (54471)  96
                                        K(SbL2+H=SbLOH+H2L)=2.8
                                        K(SbL+2OH=Sb(OH)2+HL)=-4.17
*************************************************************************
C8H8O4                   L                        (601)
4,5-Dimethoxy-1,2-benzoquinone;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
```

```
Sb+++      nmr non-aq 34°C 100%  U    M                  1981KKc (60113)  97
                                        K(SbCl3+L)=0.68
Medium: nitromethane
*************************************************************************
C9H7NO3S2             H2L                      CAS 58447-10-2  (4675)
8-Mercaptoquinoline-5-sulfonic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      sp  oth/un   ?     ?  U        K1=13.7   B2=26.1   1968ABa (64429)  98
*************************************************************************
C10H9NO3S2             HL                        (7206)
6-Methyl-5-sulfo-8-mercaptoquinoline;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      sp  oth/un 20°C 0.10M U        K1=14.25  B2=25.90  1985DAb (70179)  99
*************************************************************************
C10H16N2O8            H4L    EDTA             CAS 60-00-4  (120)
1,2-Diaminoethane-N,N,N',N'-tetraethanoic acid, Sequestric acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      vlt NaNO3  25°C 4.00M U   H    K1=19.48       1982WEa (74131) 100
DH(K1)=-25.140 kJ mol-1; DS=88 J K-1 mol-1
-------------------------------------------------------------------------
Sb+++      gl  KNO3   25°C 0.10M U                       1971OBb (74132) 101
                                        K(SbL+H)=1.02
                                        K(SbL+OH)=8.24
                                        K(SbLOH+H2O=SbL(OH)2+H)=7.46
-------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U      T                 1970AMa (74133) 102
                                        K(SbL+2OH=Sb(OH)3+HL)=12.46
-------------------------------------------------------------------------
Sb+++      sp  NaClO4 25°C  1.0M U                       1965BIb (74134) 103
                                        K(SbO+L+2H)=24.8
                                        K(SbL+OH)=-8.7
*************************************************************************
C10H18N2O7            H3L    HEDTA            CAS 150-39-0  (392)
N-(Hydroxyethyl)diaminoethane-N,N',N'-triethanoic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Sb+++      gl  KNO3   25°C 0.10M U                       1971OBb (75488) 104
                                        K(SbL+H2O=SbLOH+H)=-3.05
-------------------------------------------------------------------------
Sb+++      gl  NaClO4 20°C 0.10M U                       1970AMa (75489) 105
                                        K(SbL+OH=Sb(OH)3+H2L)=4.58
                                        K(SbHL=SbL+H)=-3.10
-------------------------------------------------------------------------
```

```
Sb+++      sp  NaClO4 25°C  1.0M U                        1966BIb (75490) 106
                                        K(SbO+L+2H)=20.2
                                        K(SbH-1L+H)=-3.2
                                        K(SbH-1L+OH)=-8.1
********************************************************************************
C11H8O3                 L                     CAS 18916-57-9  (581)
4-Methoxy-1,2-naphthoquinone;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  non-aq 34°C 100%  U   HM                   1981KKb (77140) 107
                                        K(SbCl3+L)=0.63
Medium: nitromethane
********************************************************************************
C12H10N2                L                     CAS 103-33-3  (4893)
Azobenzene; C6H5.N:N.C6H5
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  non-aq   ?  100%  U        B2=4.37         1969KNa (80654) 108
Medium: dichloroethane
********************************************************************************
C12H10N2O              HL    Solvent Yellow7  CAS 1689-82-3  (1106)
4-Hydroxyazobenzene; C6H5.N:N.C6H4.OH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  non-aq   ?  100%  U                        1969KNa (80689) 109
                                        K(Sb+2HL)=1.66
Medium: dichloroethane
********************************************************************************
C12H11N3                L                     CAS 64-09-3  (4897)
4-Aminoazobenzene; C6H5.N:N.C6H4.NH2
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  non-aq   ?  100%  U        K1=1.68         1969KNa (80861) 110
Medium: dichloroethane
********************************************************************************
C12H27O4P               L                     CAS 126-73-8  (2432)
Tri-n-butyl phosphate; (C4H9O)3PO
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Sb+++      sp  oth/un   ?     ?  U    M                   1973RGa (84122) 111
                                        K(SbBr3+L)=2.63
                                        K(SbBr3+2L)=3.24
********************************************************************************
C13H11N                 L                     CAS 538-51-2  (4969)
Benzylideneaniline; C6H5.N:CH.C6H5
```

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sp non-aq ? 100% U K1=1.77 1969KNa (85008) 112
Medium: dichloroethane
****
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-di
oxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ gl mixed 25°C 50% C K1=3.5 2002MWa (85290) 113
Medium: 50% v/v CH3CN/H2O, 0.05 M NaNO3.
****
C13H12N2 L CAS 949-87-1 (4971)
4-Methylazobenzene; CH3.C6H4.N:N.C6H5

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sp non-aq ? 100% U B2=4.07 1969KNa (85322) 114
Medium: dichloroethane
****
C14H14N2 L CAS 584-90-7 (5028)
2,2'-Dimethylazobenzene; CH3.C6H4.N:N.C6H4.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sp non-aq ? 100% U B2=4.82 1969KNa (87642) 115
Medium: dichloroethane
****
C14H14N2 L CAS 561-60-6 (5029)
4,4'-Dimethylazobenzene; CH3.C6H4.N:N.C6H4.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sp non-aq ? 100% U B2=1.30 1969KNa (87644) 116
Medium: dichloroethane
****
C14H14N2O L CAS 7466-38-8 (5066)
4-Ethoxyazobenzene; CH3.CH2.O.C6H4.N:N.C6H5

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Sb+++ sp non-aq ? 100% U B2=1.66 1969KNa (87653) 117
Medium: dichloroethane
****
C14H14N4OBr2 HL CAS 35601-32-2 (5092)
5-(3,5-Dibromo-2-pyridylazo)-2-ethylamino-4-hydroxy-1-methylbenzene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	dis	oth/un	?	?	U		K1=5.12	1967GUa (87689)	118

By spectrophotometry : K1=5.49

****

C14H15N3 L (5034)

4-Dimethylaminoazobenzene; C6H5.N:N.C6H4.N(CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	sp	non-aq	?	100%	U		K1=2.70	1969KNa (87751)	119

Medium: dichloroethane

****

C14H15N4OBr HL CAS 14337-50-9 (5095)

5-(5-Bromo-2-pyridylazo)-2-ethylamino-4-hydroxy-1-methylbenzene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	dis	oth/un	?	?	U			1967GUa (87769)	120
							K(?)=4.96		

****

C14H16N4O HL PAAC CAS 13059-69-3 (5067)

5-Ethylamino-4-methyl-2-(2'-pyridylazo)phenol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	dis	oth/un	?	?	U			1967GPa (88020)	121
							K(?)=5.53		

****

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
Sb+++	vlt	NaNO3	25°C	4.00M	U	H	K1=24.78	1982WEa (88768)	122

DH(K1)=71.2 kJ mol-1; DS=234.6 J K-1 mol-1

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sb+++	gl	NaClO4	20°C	0.10M	U			1970AMa (88769)	123
							K(SbL+2OH=Sb(OH)3+HL)=11.24		

****

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
Sb+++	gl	KNO3	25°C	0.10M	U			1971OBb (89376)	124
							K(SbL+H)=3.31		
Sb+++	gl	NaClO4	20°C	0.10M	U			1970AMa (89377)	125
							K(SbL+2OH=Sb(OH)3+HL)=9.82		

K(SbL+H)=3.57

****

C15H16N2 L CAS 889-37-2 (5104)
(4-Dimethylamino)benzalaniline; (CH3)2N.C6H4.CH:N.C6H5

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Sb+++	sp	non-aq	?	100%	U		K1=4.32		1969KNa (91919)	126

Medium: dichloroethane

****

C15H16N2 L CAS 58758-12-6 (5103)
Benzal-(4-dimethylamino)aniline; C6H5.CH:N.C6H4.N(CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Sb+++	sp	non-aq	?	100%	U		K1=3.82	B2=1.25	1969KNa (91920)	127

Medium: dichloroethane

****

C17H20N4O2 H2L CAS 39965-80-5 (5221)
1,3-Dihydroxy-4-(2-N-methylanabasinyl-alpha-azo)benzene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Sb+++	sp	mixed	?	60%	U				1972TDa (96306)	128

K(SbCl4+H3L)=5.48

Medium: 60% v/v acetone, 0.1 M KCl

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EXPLANATORY NOTES

DATA Flags are :-

T Data at other TEMPERATURES
I Data with various BACKGROUNDS
H Data for THERMOCHEMICAL quantities
M Data for TERNARY Complexes

EVALUATION Flags are :-

T or IUP=T signifies EVALUATION RATING = Tentative by IUPAC

END