SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 61 experiments for
 (no ligands specified)
 Metal : Br
 (no references specified)
 (no experimental details specified)

****

e- HL Electron (442)

Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Br	oth	none	25°C	0.0	U	I	1972COa (375)		1

K(0.5Br2+e=Br)=18.22(1.078V)

Method:Estimated data.K=19.79(1.17V,MeOH), 18.70(1.106V,EtOH), 19.79(1.171V, BuOH), 17.46(1.033V,PentOH), 19.79(acetone), 13.57(MeCN), 15.40(HCOOH)

Br	EMF	mixed	25°C	20%	U	I	1971LZa (376)	2

K=17.55(1.038V)

In 20% v/v acetic acid-H2O containing 0.1 M MeCOONa. K=1/2Br2 + e=Br-. K=18.22(1.078V,v=0),16.67(0.986V,v=50)

Br	oth	mixed	25°C	80%	U	I	1971LZa (377)	3

K=15.01(0.888V)

In 80% v/v acetic acid-H2O containing 0.1 M MeCOONa. K=1/2Br2 + e=Br-. K=14.13(0.836V,v=90)

Br	gl	oth/un	25°C		U	T	H	1971PMe (378)	4

K=7.92

Medium:varied. K=HBrO + H+ + Br-=Br2 + H2O. DH=-44.02 kJ mol-1,DS=3.8(25 C); K=8.48, DH=-62.01, DS=-57.3(10 C). Method:also emf with redox electrode

Br	gl	oth/un	35°C		U	T	H	1971PMe (379)	5

K=7.66

Medium:varied. K=HBrO + H+ + Br-=Br2 + H2O. DH=-35.82 kJ mol-1,DS=29.7(35 C) K=7.49, DH=-16.7, DS=91.2(50 C). Method:also emf with redox electrode

Br	oth	none	25°C	0.00	U	1970JSa (380)	6

K=59.61(1.763V)

K=BrO4- + 2H+ + 2e=BrO3- + H2O. Method:combination of thermodynamic data

Br	sp	NaClO4	25°C	0.03M	U	1970PIa (381)	7

K=8.02

Medium:HClO4. K=HBrO + H+ + Br-=Br2 + H2O

Br	oth	none	25°C	0.0	U	1969BBf (382)	8

K(BrO4+2H+2e=BrO3+H2O)=61.5

Method:Estimated data

```
-------------------------------------------------------------------------------
Br         kin oth/un 25°C       U                       1969PWa   (383)   9
                                        K=8.06
medium:varied. K=HBrO + H+ + Br-=Br2 + H2O
-------------------------------------------------------------------------------
Br         EMF none    0°C  0.0  M T                     1966MFa   (384)  10
                                        K=20.257, 1097.8 mV
K=19.479(10 C), 18.741(20 C), 18.033(30 C, 1084.6 mV), 17.354(40 C;1078.2mV)
16.700(50 C). K: 0.5Br2 + e = Br-
-------------------------------------------------------------------------------
Br         oth none   25°C  0.0  U                       1952LAb   (385)  11
                                        K=62.4(610 mV)
K: Br(VII)O3+3H2O+6e=3Br+6OH. From thermodynamic data. K(Br(III)O+H2O+2e=Br+
2OH)=25.7(760 mV)
-------------------------------------------------------------------------------
Br         EMF oth/un 25°C  6.0M U  I                    1927FFa   (386)  12
                                        K(BrCl+2e=Br- + Cl-)=39.04
Medium: 6 M H+. K=41.28(I=4.0). K(Br2 + Cl2 = 2BrCl)=3.49. K3(Br2 + 2Cl- =
Cl2 + 2Br-)= -11.52(I=6M); -11.25(I=4M)
*******************************************************************************
Br-                    HL    Bromide          CAS 10035-10-6  (19)
Bromide;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Br         sp  oth/un 25°C 1.00M U                       1994WKa  (1757)  13
                                        K(BrCl+Br)=4.26
                                        K(Br2+Br)=1.21
Medium: HCl
-------------------------------------------------------------------------------
Br         sp  alc/w  20°C 100%  U    M                 1979GAa  (1758)  14
                                        K(HgBr2+HgI2=2HgBrI)=1.04
                                        K(HgBr2+HgCl2=2HgBrCl)=0.70
Medium: MeOH
-------------------------------------------------------------------------------
Br         EMF non-aq 127°C 100%  U                      1971BTa  (1759)  15
                                        K(Br2+L)=3.7
Medium: dimethylsulfone
-------------------------------------------------------------------------------
Br         sp  mixed  25°C  20%  U                      1971LZa  (1760)  16
                                        K(Br2+L)=1.31
Medium: 20% v/v ethanoic acid/H2O, 1 M CH3COONa
-------------------------------------------------------------------------------
Br         sp  non-aq 30°C 100%  U                       1970DBa  (1761)  17
                                        K(Br2+L)=7.33
Medium: sulfolane,0 corr
-------------------------------------------------------------------------------
Br         kin oth/un 25°C  var  U                       1969PWa  (1762)  18
                                        K(Br2+L)=1.24
-------------------------------------------------------------------------------
```

```
Br         cal NaClO4 25°C  3.0M U   H                    1967MLa  (1763)  19
Medium:LiClO4. DH=-7.1 kJ mol-1, DS=-2.9 J K-1 mol-1
-------------------------------------------------------------------------------
Br         sp  alc/w  25°C 100%  U                        1966LMa  (1764)  20
                                      K(Br2+L)=2.26
Medium:MeOH
-------------------------------------------------------------------------------
Br         EMF oth/un 50°C  0.0  U T                     1966MFa  (1765)  21
                                      K(Br2+L)=1.11
K1=1.39(0 C),1.34(10 C),1.28(20 C),1.22(30 C),1.17(40 C)
-------------------------------------------------------------------------------
Br         cal NaClO4 25°C  3.0M U   H                   1966MLb  (1766)  22
                                      K(Br2+L)=1.05
Medium:LiClO4. DH=-6.9 kJ mol-1, DS=0
-------------------------------------------------------------------------------
Br         dis NaClO4 25°C  3.0M U       K1=1.03         1965MLb  (1767)  23
                                      B(2Br2+L)=1.58
                                      Kd(Br2=Br2(in CCl4))=1.52
-------------------------------------------------------------------------------
Br         EMF NaClO4 25°C  3.0M U                       1964BLc  (1768)  24
                                      B(Br(Br2)2)=1.40-1.44
                                      B(Br2(Br2)2)=2.58
-------------------------------------------------------------------------------
Br         sp  oth/un 20°C  var  U   H                   1964ETa  (1769)  25
                                      K(IBr+L)=2.68
                                      K(I2+L)=1.02
DH(IBr+L)=-45.1 kJ mol-1, DH(I2+L)=-5.9
-------------------------------------------------------------------------------
Br         sp  alc/w  25°C 100%  U T H                   1963DHb  (1770)  26
                                      K(Br2+Br=Br3)=2.55
Medium:MeOH. K(Br2+Br=Br3)=2.55(-15C), 2.42(5C), 2.31(18 C).
DH=-24.2 kJ mol-1. Also K for MeOH/H2O mixtures.
-------------------------------------------------------------------------------
Br         dis none   21°C  0.0  U                       1961APa  (1771)  27
                                      Kd(IBr=IBr(in CCl4))=0.63
                                      K(IBr+Br)=2.64
-------------------------------------------------------------------------------
Br         dis none   21°C  0.0  U       K1=2.51         1961APa  (1772)  28
                                      Kd(AtBr=AtBr(CCl4))=-1.4
-------------------------------------------------------------------------------
Br         sp  oth/un 25°C  dil  U T H                   1960DAc  (1773)  29
                                      K(Br2+Br=Br3)=1.37
K=1.44(18.1 C), 1.24(39.4 C). DH(K)=-16 kJ mol-1
-------------------------------------------------------------------------------
Br         con oth/un  rt   var  U                       1959PBa  (1774)  30
                                      B(IBr+3Br=IBr4)=3.70
Medium: HBr.
-------------------------------------------------------------------------------
Br         kin oth/un 24°C  var  U T                     1959PUa  (1775)  31
                                      K(BrCN+Br)=1.0
```

K=0.5(29 C)

Br sp none 25°C 0.0 U 1958BAb (1776) 32
K(Br2+Br=Br3)=1.24

Br dis NaClO4 25°C 0.50M U T H 1958STa (1777) 33
K(Br2+Br=Br3)=1.22
K(Br3+Br2=Br5)=0.18
K(Br2+Br)=1.30(5 C), 1.18(35 C); K(Br3+Br2)=0.29(5 C), 0.11(35 C).
DH(Br2+Br)=-7.1 kJ mol-1, DS=0

Br sp mixed 25°C 100% U IH 1957NAb (1778) 34
K(Br2+Br=Br3)=1.72
CH3CO2H/H2O, 0.1 M Na(CH3CO2). K(Br2+Br)=1.44(50%). In 75% K=2.0(2 C),
DH(K)=-14 kJ mol-1

Br sol oth/un 25°C var U 1947KOa (1779) 35
K(2Br2+Br=Br5)=1.30

Br dis oth/un 25°C var U 1934FAa (1780) 36
Kd(IBr=IBr(in CCl4))=0.59
K(IBr+Br)=2.57

Br sol none 25°C 0.0 U 1934JBa (1781) 37
K(Br2+Br=Br3)=1.20
B(2Br2+Br=Br5)=1.60

Br con oth/un 25°C 0.0 U 1934LIa (1782) 38
K(2Br2+Br=Br5)=0.92?

Br con none 25°C 0.0 U T 1934LIa (1783) 39
B(2Br2+Br=Br5)=1.30.
K(2Br2+Br=Br5)=1.60(0 C)

Br dis none 22°C 0.0 U T 1932GMb (1784) 40
Kd(Br2=Br2(in CCl4))=1.44
K(Br2+Br=Br3)=1.25
I=0 corr. At 16.5C: Kd=1.42, K(Br2+Br=Br3)=1.27.

Br sp oth/un 16°C var U 1928JOa (1785) 41
K(Br2+Br)=1.46

Br sol oth/un 27°C var U 1918LIa (1786) 42
K(Br2+Br=Br3)=1.20
K(Br3+Br2=Br5)=0.08
K(2Br2+Br=Br5)=1.28
Medium: KBr. At 32.6C: K(Br3+Br2)=0.03, K(Br2+Br)=1.19, K(2Br2+Br)=1.22

Br sol oth/un 0°C var U 1918LIa (1787) 43
K(Br2+Br=Br3)=1.29

```
                                        K(Br3+Br2=Br5)=0.32
                                        K(2Br2+Br=Br5)=1.61
Also by conductivity. Medium: KBr.  At 25C: K(Br2+Br)=1.21, K(Br3+Br2)=0.09,
K(2Br2+Br)=1.30
--------------------------------------------------------------------------------
Br         dis oth/un 25°C  var  U                      1896JAa  (1788)  44
                                        K(Br2+Br=Br3)=1.2
********************************************************************************
CN-                    HL    Cyanide          CAS 74-90-8  (230)
Cyanide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         kin oth/un 24°C  var  U T                    1959PUa  (2616)  45
                                        K(BrCN+CN)=4.72
K=4.89(20 C), 4.52(29 C), 4.04(41.5C), 3.59(56 C), 3.08(70 C)
********************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         sp  oth/un 25°C  1.0M C T H                 1999BMb  (4565)  46
                                        K(2BrCl=Br2+Cl2)=-2.12
                                        K(BrCl(g)=BrCl(aq))=-0.027
Cation is Br+. Medium: 1.0 M HCl. Data for 6-26 C. DH=45.1 kJ mol-1,
DS=111 J K-1 mol-1. DH(BrCl(g)=BrCl(aq))=-46.8 kJ mol-1, DS=-157 J K-1 m-1
--------------------------------------------------------------------------------
Br         sp  oth/un 22°C 0.60M U  I                 1974MKg  (4566)  47
                                        K(Br2+Cl)=0.00
Medium: 0.6-0.85 M KCl. K=-0.08(RbCl), -0.16(CsCl)
--------------------------------------------------------------------------------
Br         dis oth/un 25°C 0.60M U TI                 1973MKb  (4567)  48
                                        K(Br2+Cl)=0.1
Medium:0.6-0.7 M KCl. At 25 C: K=-0.03(in RbCl), K=-0.11(CsCl)
At 0 C: K=0.2(KCl), K=0.05(RbCl), K=-0.03(CsCl)
--------------------------------------------------------------------------------
Br         sp  oth/un 25°C  var  U       K1=0.06      1966BPe  (4568)  49
                                        K(Br2+2Cl=BrCl2+Br)=-2.14
--------------------------------------------------------------------------------
Br         sp  oth/un 25°C  var  U T H                 1960DAc  (4569)  50
                                        K(Br2+L)=0.17
K=0.20(18.1 C), 0.11(39.4 C). DH(K)=-7.1 kJ mol-1
--------------------------------------------------------------------------------
Br         EMF oth/un  rt   var  U                    1959PBa  (4570)  51
                                        K(BrL+5L=BrL6)=2.42
--------------------------------------------------------------------------------
Br         kin oth/un 24°C  var  U T                  1959PUa  (4571)  52
                                        K(BrCN+L)=1.5
K=1.4(29 C)
```

```
--------------------------------------------------------------------------------
Br         sp  none   25°C  0.0  U                        1958BAb  (4572)  53
                                        K(Br2+L)=0.14
--------------------------------------------------------------------------------
Br         sol oth/un 25°C  var  U                        1947KOa  (4573)  54
                                        K(Br2+L)=0.08
--------------------------------------------------------------------------------
Br         sp  oth/un 16°C  var  U                        1928JOa  (4574)  55
                                        K(Br2+L)=0.72
--------------------------------------------------------------------------------
Br         dis oth/un 30°C  var  U                        1922RSa  (4575)  56
                                        K(Br2+L)=0.15
--------------------------------------------------------------------------------
Br         dis oth/un 25°C  var  U                        1896JAa  (4576)  57
                                        K(Br2+L)=0.14
********************************************************************************
CrO4--                 H2L    Chromate         CAS 7738-94-5  (2382)
Chromate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         kin NaClO4 26°C 2.00M U T                      1971RKa  (6476)  58
                                        K'=1.14
38 C: K'=1.08. K': Br+2H+HCrO4=HCrO3+H2O.   DH=-8.8 kJ mol-1
********************************************************************************
I-                      HL    Iodide           CAS 10034-85-2  (20)
Iodide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         kin oth/un 24°C  var  U T                      1959PUa  (7905)  59
                                        K(BrCN+L)=1.78
K=1.85(20 C), 1.65(29 C), 1.40(41.5 C), 1.15(56 C), 0.88(70 C)
********************************************************************************
SCN-                    HL    Thiocyanate      CAS 463-56-9  (106)
Thiocyanate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         kin oth/un 24°C  var  U T                      1959PUa (14838)  60
                                        K(BrCN+L)=1.7
At 29 C K=1.5
********************************************************************************
SO2                      L    Sulfur dioxide     (6336)
Sulfur dioxide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Br         sp  non-aq 25°C 100%  U T H    K1=2.00         1971WNb (15352)  61
Medium: MeCN. DH(K1)=-12.9 kJ mol-1, DS(K1)=-5.0 J K-1 mol-1
```

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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

END