```
SC-Database
Software version = 5.81  Data version = 4.62
Experiment list contains 20 experiments for
 (no ligands specified)
 Metal : Bk+++
 (no references specified)
 (no experimental details specified)


********************************************************************************
e-                    HL    Electron            (442)
Electron;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
--------------------------------------------------------------------------------
Bk+++      dis oth/un 25°C 4.00M U  I                       1971WSc   (371)   1
                                      K=-1.08
Medium: HNO3; K: Bk(IV)+Ce(III)=Bk(III)+Ce(IV);  data also in 4 M HClO4
(K=-1.88); also data for 1,2,3,5,6,7 and 8 M acid
--------------------------------------------------------------------------------
Bk+++      EMF oth/un 25?°C 0.10M U                         1970PHa   (372)   2
                                    K(Bk++++ + e)=24.2(1.43V)
Medium: H2SO4
--------------------------------------------------------------------------------
Bk+++      oth none   25°C  0.0  U                          1969NBa   (373)   3
                                  K(Bk+e=Bk(II))=-57.5(-3.4V)
Method:Estimated data
--------------------------------------------------------------------------------
Bk+++      EMF oth/un 25°C 0.50M U                          1969SBb   (374)   4
                                  K(Bk++++ + e)=23.2(1.37V)
Medium: 0.5-2 M H2SO4
********************************************************************************
Br-                   HL    Bromide         CAS 10035-10-6  (19)
Bromide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
--------------------------------------------------------------------------------
Bk+++      dis NaClO4 20°C 3.00M U        K1=0.15   B2=0.29  1982FKb  (1756)  5
********************************************************************************
Cl-                   HL    Chloride        CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
--------------------------------------------------------------------------------
Bk+++      dis NaClO4 20°C 3.00M U        K1=0.59   B2=0.25  1982FKb  (4563)  6
--------------------------------------------------------------------------------
Bk+++      dis NaClO4 25°C  1.0M U        K1=-0.02           1972HPa  (4564)  7
********************************************************************************
OH-                   HL    Hydroxide           (57)
Hydroxide;
--------------------------------------------------------------------------------
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----------------------------------------------------------------------------
Bk+++      dis NaClO4 23°C 0.10M U                          1969DHa (11094)   8
                                      *K1=-5.66
Medium: LiClO4
******************************************************************************
PO4---              H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
-----------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----------------------------------------------------------------------------
Bk+++      sp  non-aq 25°C 100%  U                          1988PLa (13120)   9
                                      K(Bk+H2PO4)=12.15
Medium: acetonitrile
******************************************************************************
SCN-                HL     Thiocyanate      CAS 463-56-9  (106)
Thiocyanate;
-----------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----------------------------------------------------------------------------
Bk+++      dis NaClO4 25°C  5.0M U T H  T K1=0.86      1974KCa (14836)  10
K1=0.85(10 C), 0.85(40 C), 0.93(55 C). By calorimetry, DH(K1)=2.9 kJ mol-1
-----------------------------------------------------------------------------
Bk+++      dis NaClO4 25°C  1.0M U        T K1=0.49   B2=-0.51  1972HPb (14837)  11
                                            B3=0.37
******************************************************************************
SO4--               H2L    Sulfate          CAS 7664-93-9  (15)
Sulfate;
-----------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----------------------------------------------------------------------------
Bk+++      dis none   25°C  0.0  U         K1=3.71   B2=5.59   1972MCc (16033)  12
                                            B3=5.04
******************************************************************************
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
-----------------------------------------------------------------------------
Bk+++      oth oth/un 25°C 0.10M U         K1=5.50   B2=9.19   1971STe (18822)  13
Method : electrical migration or transference number
******************************************************************************
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
-----------------------------------------------------------------------------
Bk+++      dis NaClO4 25°C 2.00M U T      K1=2.05      1970CSd (19908)  14
0.7 C: K1=1.77, 10.4 C: K1=1.98, 39.8 C: K1=2.18
******************************************************************************
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C2H4O3               HL    Glycolic acid    CAS 79-14-1  (33)
2-Hydroxyethanoic acid; HO.CH2.COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
--------------------------------------------------------------------------------
Bk+++      dis NaClO4 25°C 2.00M U T    T K1=2.65   B2=4.70  1972CDb (20500)  15
0.5 C: K1=2.73, K2=1.91; 52.8 C: K1=2.57, K2=1.98
********************************************************************************
C6H8O7               H3L   Citric acid    CAS 77-92-9  (95)
2-Hydroxypropane-1,2,3-tricarboxylic acid; HOOCCH2.CH(OH)(COOH).CH2COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
--------------------------------------------------------------------------------
Bk+++      oth oth/un 25°C 0.10M U        K1=7.89   B2=11.19  1971STe (46051)  16
                                    K(BkL+HL)=2.60
Constants obtained by survey of literature data
********************************************************************************
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
--------------------------------------------------------------------------------
Bk+++      dis NaCl   25°C 0.10M C        K1=14.36       1985CMc (79426)  17
Method: extraction of 249Bk from 0.1 M NaCl (pH 5.5) into toluene/HDEHP.
********************************************************************************
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
--------------------------------------------------------------------------------
Bk+++      ix  R4N.X  25°C 0.10M U        K1=19.16       1966BAc (88599)  18
Medium: NH4ClO4
********************************************************************************
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
--------------------------------------------------------------------------------
Bk+++      oth oth/un    0.10M U        K1=23.1        1966STb (89168)  19
Literature data from ORNL-3651
--------------------------------------------------------------------------------
Bk+++      ix  R4N.X  25°C 0.10M U        K1=22.79       1965BAc (89169)  20
Medium: NH4ClO4
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REFERENCES

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   1972HPa   H Harmon,J Peterson,W McDowell; Inorg.Nucl.Chem.Lett.,8,57 (1972)
   1972HPb   H Harmon,J Peterson et al; J.Inorg.Nucl.Chem.,34,1381 (1972)
   1972MCc   W McDowell,C Coleman; J.Inorg.Nucl.Chem.,34,2837 (1972)
   1971STe   A Stepanov; Zh.Neorg.Khim.,16,11,2981 (1971)
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   1970PHa   R Propst,M Hyder; J.Inorg.Nucl.Chem.,32,2205 (1970)
   1969DHa   B Desire,M Hussonois et al; Compt.Rend.,269C,448 (1969)
   1969NBa   L Nugent,R Baybarz,J Burnett; J.Phys.Chem.,73,1177 (1969)
   1969SBb   J Stokely,R Baybarz,W Schults; Inorg.Nucl.Chem.Lett.,5,877 (1969)
   1966BAc   R Baybarz; J.Inorg.Nucl.Chem.,28,1055 (1966)
   1966STb   J Stary; Talanta,13,421 (1966)
   1965BAc   R Baybarz; J.Inorg.Nucl.Chem.,27,1831 (1965)
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EXPLANATORY NOTES

   DATA Flags are :-

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

   EVALUATION Flags are :-

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

END