SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 355 experiments for
 (no ligands specified)
 4 metals : Np+++, Np++++, NpO2+, NpO2++
 (no references specified)
 (no experimental details specified)

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

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Np+++ oth oth/un 25°C 1.0M U 1952LAb (721) 1
  K(Np+3e=Np(s))=-94.1(-1860 mV)
From thermodynamic data
****
Br- HL Bromide CAS 10035-10-6 (19)
Bromide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Np+++ sp oth/un var U K1=-3.39 B2=-6.48 1966SMd (2156) 2
Medium:LiBr var
****
Cl- HL Chloride CAS 7647-01-0 (50)
Chloride;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Np+++ ISE NaClO4 25°C 4.00M U 1974DCa (5300) 3
  K(NpO2+Cl)=-0.04

Np+++ sp KCl ? var U K1=-2.42 B2=-4.96 1966SMd (5301) 4
Medium:LiCl var
****
OH- HL Hydroxide (57)
Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Np+++ EMF none 25°C 0.0 U T H 1984LEa (11799) 5
  *K1=-7.0
100 C: *K1=-5.3; 150 C: *K1=-4.5. Evaluated data

Np+++ EMF oth/un 25°C 0.30M U 1974MKe (11800) 6
  *K1=-7.43
****
PO4--- H3L Phosphate CAS 7664-38-2 (176)

Phosphate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Np+++	EMF	none	25°C	0.0	U	T H	K(Np+H2PO4)=2.4 K(Np+2H2PO4)=3.7 K(Np+3H2PO4)=5.6	1984LEa (13269)	7

Evaluated data

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Np+++	oth	none	?	0.0	U		K(Np+H2L)=2.40 K(Np+2H2L)=3.73 K(Np+3H2L)=5.64	1969MOc (13270)	8

Methods: solubility, ion exchange, distribution, EMF

****

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
Np+++	oth	none	?	0.00	U		K1=2.77 B2=5.04 B3=6.58	1969MOc (20082)	9

Data from survey of literature data

****

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
Np+++	oth	none	?	0.00	U		K1=3.60 B2=6.15	1969MOc (20597)	10

Data from survey of literature data

****

C4H8O2 HL Isobutyric acid CAS 79-31-2 (573)

2-Methylpropanoic acid; CH3.CH(CH3).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Np+++	oth	none	?	0.00	M		K1=3.60 B2=6.10 B3=7.30	1969MOc (33241)	11

Data from survey of literature data

****

C6H9NO6 H3L NTA CAS 139-13-9 (191)

Nitrilotriethanoic acid; N(CH2.COOH)3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Np+++	oth	none	?	0.00	M		K1=12.7	1969MOc (46953)	12

Constant obtained from survey of literature data

****

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
Np+++	sp	oth/un	22°C	0.1M	U		K1=17.21	1974KMd (74026)	13
Np+++	oth	oth/un	?	0.0	U		K1=20.5	1969MIb (74027)	14

From survey of literature data

****

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
Np+++	oth	oth/un	?	0.0	U		K1=21.2	1969MOc (88741)	15

Method: from survey of literature data

****

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
Np+++	sp	oth/un	22°C	0.1M	U		K1=22.38	1974KMd (89339)	16
Np+++	oth	oth/un	?	0.0	U		K1=25.2	1969MOc (89340)	17

From survey of literature data

****

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Np++++	EMF	KNO3	25°C	1.0M	U	I		1958SPa (722)	18
							K(Np+e=Np(III))=1.93(114 mV)		

Medium: HNO3. In 0.5 M H2SO4: K=-0.78(-46 mV), 1 M HCl: K=2.45(145 mV),
1 M HClO4: K=2.37(140 mV)

Np++++	EMF	NaClO4	25°C	1.03M	U	T		1952CHa (723)	19
							K(Np+e=Np(III))=2.62(155.1 mV)		

Medium: HClO4. At 15.2 C: K=2.48(142.1 mV), 35.4 C: 2.77(169.4 mV)

Np++++	vlt	KCl	25°C	1.0M	U			1950HKb (724)	20
							K(Np+e=Np(III))=2.40(142 mV)		
Np++++	EMF	KCl	25°C	1.0M	U			1949HMa (725)	21
							K(Np+e=Np(III))=2.32(137 mV)		

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	dis	oth/un	25°C	1.00M	U		K1=-0.21	B2=-0.78	1975RRa	(2157)	22

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	oth	none	25°C	0.0	M				1999KRa	(3302)	23
							B4=ca. 35.1				

Evaluation of literature data.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	sol	oth/un	25°C	0.05M	U		K1=<22.5	B2=<27.9	1985RRa	(3303)	24
							B3 <33.2				
							B4 <38.5				
							B5 <41.6				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	EMF	none	25°C	0.0	U	T H			1984LEa	(3304)	25
							B5=38.3				

100 C: B5=42; 150 C: B5=46. Evaluated data

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	sol	oth/un	?	var	U	I	B2=13.0		1971MOd	(3305)	26
							B(Np(OH)4L)=53.08				
							B(NpO2(OH)L2)=4.84				
							B(NpO2(OH)2L)=23.32				

Medium: (NH4)2CO3. At I=0 (corr), B2=14.2

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	EMF	none	25°C	0.0	U	T H	K1=0.2	B2=-0.1	1984LEa	(5302)	27

At 100 C: K1=1.5, B2=3.5; 150 C: K1=3, B2=5. Evaluated data

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	dis	NaClO4	25°C	2.00M	U		K1=-0.046	B2=-0.15	1975PRb	(5303)	28

By extraction from 2M HClO4/HCl with dinonylnaphthalene sulfonic acid

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	sp	NaClO4	?	9.0M	U		K1=2.12	B2=3.04	1973BMe	(5304)	29

Medium: HClO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	dis	NaClO4	25°C	4.0M	U		K1=-0.11	B2=-0.10	1971DCb	(5305)	30

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference		ExptNo
Np++++	dis	NaClO4	20°C	2.0M	U	I	K1=0.04	B2=-0.15	1966SNe	(5306)	31

Medium: HClO4. When I=1: K1=-0.04, B2=-0.24, B3=-0.48; I=0.5: K1=0.15

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference		ExptNo
Np++++	sp	NaClO4	25°C	2.0M	U		K1=-0.28	1962STb	(5307)	32

```
Np++++     EMF NaClO4 25°C  1.0M U        K1=-0.3        1958SPa  (5308)  33
*******************************************************************************
CrO4--                H2L    Chromate         CAS 7738-94-5  (2382)
Chromate;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Np++++     sp  NaClO4 10°C 0.20M U TIH                   1972BTc  (6499)  34
                                        *K1=1.76
17 C; *K1=1.78. 25.0 C; *K1=1.80. DH(*K1)=4.3 kJ mol-1
*******************************************************************************
F-                     HL    Fluoride         CAS 7644-39-3  (201)
Fluoride;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Np++++     ISE NaClO4 23°C  1.0M C        K1=8.17   B2=14.52  1990SCa  (7056)  35
                                        B3=20.05
                                        B4=25.95
Medium: 1.0 M HClO4/NaClO4. Method: F ion selective electrode.
-------------------------------------------------------------------------------
Np++++     EMF none   25°C  0.0  U T H    K1=8.7    B2=15.4   1984LEa  (7057)  36
100 C: K1=8.8, B2=16.0; 150 C: K1=9.0, B2=16.6.  Evaluated data
-------------------------------------------------------------------------------
Np++++     dis NaClO4 25°C 2.00M U        K1=4.70   B2=7.38   1976BRb  (7058)  37
-------------------------------------------------------------------------------
Np++++     dis NaClO4 25°C 2.00M U        K1=4.72        1975PRb  (7059)  38
By extraction from 2M HClO4/HCl with dinonylnaphthalene sulfonic acid
-------------------------------------------------------------------------------
Np++++     ix  NaClO4 25°C  1.0M U  I                   1969KKc  (7060)  39
                                        K1(Np+HF=NpF+H)=4.56
Medium: HClO4. K=4.70(I=2)
-------------------------------------------------------------------------------
Np++++     ix  KNO3     ?   1.0M U  I                   1969KKd  (7061)  40
                                        K(Np+HF=NpF+H)=4.23
Medium: HNO3. K=4.11(I=2)
-------------------------------------------------------------------------------
Np++++     EMF NaClO4 20°C  4.0M U                     1966ABa  (7062)  41
                                        K(NpF+HF=NpF2+H)=2.69
                                        K(NpF2+HF=NpF3+H)=2.34
                                        K(NpF3+HF=NpF4+H)=1.3
Medium: HClO4. By cation exchange: K(Np+HF=NpF+H)=4.82,K(NpF+HF=NpF2+H)=2.75
*******************************************************************************
MoO4--                H2L    Molybdate          (443)
Molybdate;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Np++++     oth oth/un   ?        U                      1974TGb  (8744)  42
                                        K2'=5.73
```

K3'=4.28
K4'=3.64
K5'=3.24
K6'=K7'=K8'=ca. 3. Kn: H+(H(n-1)A) (9-n)- where A = NpMo12O42 8-

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values			Reference	ExptNo
Np++++	sp	KNO3	?	var	U				1973RAa	(9812)	43
							K(Np(H2O)8+6L=Pu6+8H2O)=6.11				
Np++++	sp	NaClO4	?	9.0M	U		K1=0.90	B2=2.06	1972BMd	(9813)	44
Medium: HClO4											
Np++++	dis	NaClO4	25°C	4.0M	U		K1=-0.15	B2=-0.74	1971DCb	(9814)	45
Np++++	dis	NaClO4	25°C	2.0M	U	I	K1=0.83	B2=1.30	1971MOf	(9815)	46
							B3=1.55				
							B4=1.55				
Medium: 2 M LiClO4. In 4 M LiClO4, K1=0.72, B2=1.08, B3=1.23, B4=1.16											
Np++++	dis	NaClO4	20°C	8.0M	U		K1=-1.52	B2=-0.17	1970LKa	(9816)	47
							B3=-0.82				
							B4=-0.89				
Np++++	sol	oth/un		2.0M	U		K1=0.83	B2=1.30	1969MOc	(9817)	48
							B3=1.55				
							B4=1.55				
Np++++	sp	NaClO4	25°C	2.0M	U		K1=0.34	B2=0.18	1966RYa	(9818)	49
Np++++	dis	NaClO4	20°C	2.0M	U	I	K1=0.30	B2=0.34	1966SNe	(9819)	50
Medium: HClO4. K1=0.34(I=1),0.45(I=0.5); B2=0.08(I=1); B3=-0.26(I=1)											
I=0 corr: K1=1.68											
Np++++	sp	NaClO4	25°C	2.0M	U		K1=0.11		1962STb	(9820)	51
Np++++	EMF	NaClO4	25°C	1.0M	U		K1=0.38		1958SPa	(9821)	52

****

OH- HL Hydroxide (57)
Hydroxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values			Reference	ExptNo
Np++++	sp	NaClO4	25°C	0.1M	C		K1=12.07		2003YFa	(11801)	53
							K3=1.11				
in HClO4/NaClO4											
For I=0.3 M K1=11.96; for I=1.0 M K1=11.76; for I=0 M K1=12.77; B2=24.3											

```
--------------------------------------------------------------------------------
Np++++     oth none   25°C  0.0  M                        1999KRa (11802)  54
                                      *B4=-10
Evaluation of literature data.
--------------------------------------------------------------------------------
Np++++     oth KNO3   25°C 0.10M C                        1988NTb (11803)  55
                                      Kso(NpO2)=-55.4
Method: paper electrophoresis using 237Np(V). Medium: KNO3, 0.005-0.10 M
--------------------------------------------------------------------------------
Np++++     sol oth/un 25°C 0.05M U                        1985RRa (11804)  56
                                      *B(1,5) < -24.7
--------------------------------------------------------------------------------
Np++++     EMF none   25°C  0.0  U T H                    1984LEa (11805)  57
                                      *K1=-1.0
                                      *B2=-2.8
                                      *B3=-5.8
                                      *B4=-9.6,   *B5=-14
100 C, values: 0.7, 0, -2, -6, -11. Evaluated data
--------------------------------------------------------------------------------
Np++++     oth NaClO4 25°C  dil  U                        1980SGe (11806)  58
                                      K(Np(OH)2+H=Np(OH))=4.5
                                      K(Np(V)O2(OH)+H=NpO2(V))=8.7
Method: pulse irradiation
--------------------------------------------------------------------------------
Np++++     sol oth/un 20°C       U                        1971MOd (11807)  59
                                      Kso(Np(OH)4(s)=Np+4OH)=-55.2
--------------------------------------------------------------------------------
Np++++     gl  NaClO4 25°C  2.0M U  I                     1959HSc (11808)  60
                                      *K1=-2.3
In D2O *K1=-2.5
********************************************************************************
O2--                  H2L    Peroxide         CAS 7772-84-1  (2813)
Peroxide; -O.O-
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Np++++     sp  oth/un 25°C  1.0M U                        1970BSe (12690)  61
                                      K(2Np+H2L=complex(?))=4.5
********************************************************************************
PO4---                H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Np++++     EMF none   25°C  0.0  U T H                    1984LEa (13271)  62
                                      K(Np+HPO4)=12.9
                                      K(Np+2HPO4)=23.7
                                      K(Np+3HPO4)=33.4
                                      K(Np+4HPO4)=43.2
K(Np+5HPO4)=52.0. At 150 C: values are 24, 33, 45, and 55 respectively.
```

Evaluated data

Np++++ oth none 25?°C 0.0 U 1967MEb (13272) 63
K(Np(HL)2(s)=Np+2HL)=-28
K(Np+HL)=12.4
K(Np+2HL)=23.1
K(Np+3HL)=32
Method: estimated from literature. K(Np+4HL)=41.0

****

P2W17O61---------- Polytungstate (2102)
alpha-Heterodiphospho-polytungstate (usually alpha1 isomer)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Np++++	sp	oth/un	19°C	1.00M	U		B2=34		1980SHa (13730)	64

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Np++++	dis	NaClO4	25°C	2.0M	U		K1=1.5	B2=2.06	1978RBb (15192)	65
							B3=2.53			

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Np++++	EMF	none	25°C	0.0	U	T H	K1=5.5	B2=9.9	1984LEa (16407)	66

100 C: K1=6.6, B2=11.8; 150 C: K1=7.5, B2=13.1. Evaluated data

---

Np++++ dis NaClO4 25°C 2.00M U 1976BRb (16408) 67
K(Np+HL=NpL+H)=2.53
K(Np+2HL=NpL2+2H)=4.00

Np++++ kin NaClO4 25°C 1.0M U K1=2.56 B2=3.75 1976NMa (16409) 68
B(Np2L)=2.04
B(Np2L2)=3.00

Np++++ dis NaClO4 23°C 2.0M U 1973PRa (16410) 69
*K1=2.52
*B2=4.01
Medium: HClO4

Np++++ dis NaClO4 10°C 2.0M U T H 1973PRb (16411) 70
*K1=2.45
*K2=1.5
Medium: HClO4. At 25 C: *K1=2.5, *K2=1.55; 40 C: *K1=2.54.
DH(*K1)=5.2 kJ mol-1

Np++++ dis NaClO4 10°C 2.0M U T 1973PRb (16412) 71
*K1=2.39
*K2=1.44
*K1=2.47, *K2=1.36(25.2 C). *K1=2.49, *K2=1.32(35.3 C)

Np++++ ix NaClO4 20°C 4.0M U 1966ABa (16413) 72
K(Np+HF=NpF+H)=2.70
K(NpF+HF=NpF2+H)=1.56
Medium: HClO4

Np++++ vlt NaClO4 25°C 3.0M U 1962MUc (16414) 73
*K1=2.49
*B2=3.58

Np++++ sp NaClO4 25°C 2.0M U K1=3.51 1962STb (16415) 74

Np++++ dis NaClO4 25°C 2.0M U T H K1=2.43 B2=3.47 1954SHa (16416) 75
At 10 C: K1=2.47, K2=0.91; 35.3 C: K1=2.40, K2=1.14. DH(K1)=16.8 kJ mol-1, DS=123 J K-1 mol-1; DH(K2)=25.9, DS=171
****
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
---
Np++++ sp NaClO4 25°C 1.00M U K1=2.88 1984AKa (17627) 76
****
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
---
Np++++ dis NaClO4 25°C 1.00M U K1=9.22 B2=16.63 1976BRa (18991) 77

Np++++ sol oth/un 23°C ? U K1=8.64 B2=16.8 1967MEc (18992) 78
B3=23.2
B4=27.0

Np++++ sol NaClO4 26°C 1.0M U K1=9.63 B2=16.88 1964BSb (18993) 79
B3=23.69
Medium: HClO4. 24-28 C

Np++++ sol oth/un 20°C ? U 1958MGa (18994) 80
Kso=-22.07
****
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

```
------------------------------------------------------------------------------
Np++++     oth oth/un   ?  0.50M U        K1=2.68   B2=4.76   1969MOc (20083)  81
                                         B3=7.49
                                         B4=9.67
                                         B5=12.0
                                         B6=14.7
Data from survey of literature data. B7=17.4, B8=20.2
Metal ion is NpO++
******************************************************************************
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
------------------------------------------------------------------------------
Np++++     dis NaClO4 25°C 1.00M U        K1=8.58   B2=17.23  1970LSc (38048)  82
                                         K3=6.71
                                         K4=6.28
******************************************************************************
C5H9N3O4S              H2L                    CAS 16907-58-7  (2106)
Thiosemicarbazone-diethanoic acid; H2N.CS.NH.N(CH2.COOH)2
------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
------------------------------------------------------------------------------
Np++++     sp  NaClO4 25°C 0.05M U        B2=7.11        1988CDa (39571)  83
******************************************************************************
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
------------------------------------------------------------------------------
Np++++     sp  NaClO4 25°C 1.00M U      T K1=17.28  B2=32.06  1971EPb (46954)  84
******************************************************************************
C6H12O6                HL    a-ISA            CAS 1518-54-3  (5925)
a-Isosaccharinic acid;
------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
------------------------------------------------------------------------------
Np++++     sol oth/un 25°C 0.11M C                       2003RHa (49623)  85
                                         Ks(NpO2+H+L+H2O=Np(OH)3L)=2.57
                                         Ks(NpO2+H+2L=Np(OH)3L2)=4.68
                                         Ks(NpO2+L+2H2O=Np(OH)4L)=-4.76
                                         Ks(NpO2+2L=Np(OH)4L2)=-2.90
Solubility of NpO2(am) in 0.08 M NaL/ 0.01 M Na2S2O4, pH 5-12.
Oxidation state determined by solvent extraction with dibenzoylmethane.
******************************************************************************
C8H5O2F3S              HL    TTA              CAS 326-91-0  (165)
4,4,4-Trifluoro-1-(2-thienyl)butane-1,3-dione; F3C.CO.CH2.CO.C4H3S
------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
------------------------------------------------------------------------------
```

Np++++ dis NaClO4 25°C 2.00M U K1=1.68 1976BRb (58659) 86

Np++++ dis oth/un 25°C 0.45M C 1971CLb (58660) 87
B4=29.7
Extraction from edta solution, pH <0.35, I=0.45 M HNO3, into benzene using 239Np tracer. K(Np+4HL(org)=NpL4(org)+4H)=4.22.

****

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

---

Np++++ dis oth/un 25°C 0.45M C K1=22.9 1971CLb (74028) 88
K(Np+H4L=NpL+4H)=1.80
Extraction with tta from edta solution, pH <0.35, I=0.45 M HNO3, into benzene using 239Np tracer.

Np++++ sp NaClO4 25°C 1.0M U T K1=24.55 1971EPb (74029) 89

****

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

---

Np++++ sp NaClO4 25°C 1.0M U K1=12.97 B2=23.72 1971EPb (75463) 90

****

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

---

Np++++ ix oth/un 25°C 0.10M U K1=30.96 1973CCc (89341) 91
K(Np+HL)=21.5
K(Np+H2L)=12.3
Medium 0.5-1.0 M HCl

Np++++ ix oth/un 25°C var C K1=30.96 1973CCd (89342) 92
K(Np+HL)=21.5
K(Np+H2L)=12.3
Medium: 0.58-1.04 M HClO4.

Np++++ EMF oth/un 20°C 0.50M U K1=29.29 1972PRc (89343) 93

Np++++ sp NaClO4 25°C 1.0M U K1=30.33 1971EPb (89344) 94

Np++++ ix R4N.X ? 1.0M U K1=29.80 1971MOc (89345) 95
Medium: NH4Cl

Np++++ oth oth/un ? 1.0M U K1=29.8 1969MOc (89346) 96
From survey of literature data

```
********************************************************************************
e-                    HL    Electron          (442)
Electron;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2+      oth none   25°C  0.0  M                        1999KRa   (726)  97
                                      K(NpO2+e)=10.07(596 mV)
Evaluation of literature data. K: NpO2+e=Np(IV)
--------------------------------------------------------------------------------
NpO2+      EMF none   25°C  0.0  U T H                    1984LEa   (727)  98
                                      *K'=-0.4
                                      *K"=-39.5
                                      *K"'=-56.3
*K': 4NpO2+4H+O2=4Np(VI)O2+2H2O. *K": 4NpO2+12H=4Np(IV)+O2+6H2O.
*K"': 2NpO2+4H=2Np(IV)+O2+2H2O. At 150 C, values: -6. -41, -40
--------------------------------------------------------------------------------
NpO2+      sp  KCl    450°C 100%  U T H                  1974LLa   (728)  99
                                      K=-5.03
Medium:(Li,K)Cl. K: NpO2+ +4HCl(g)=Np(IV)+2H2O(g)+1/2Cl2(g)+3Cl-;
DH-40.00 kJ mol-1; K=-5.29(500 C), -5.38(550 C), -5.57(600 C)
--------------------------------------------------------------------------------
NpO2+      EMF NaClO4 25°C  1.0M U T                     1952CHa   (729) 100
                                      K=12.49(738.8 mV)
Medium: HClO4. K: NpO2+4H+e=Np(IV)+2H2O. At 35.4 C: K=11.62(711.5 mV),
47.4 C: K=10.67(678.6 mV)
--------------------------------------------------------------------------------
NpO2+      EMF oth/un 25°C  1.0M U                      1949HMa   (730) 101
                                      K=12.5(740 mV)
Medium: HCl. K: NpO2+4H+e=Np(IV)+2H2O
********************************************************************************
CO3--                  H2L    Carbonate        CAS 465-79-6  (268)
Carbonate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2+      sol oth/un 25°C  0.0  C  I                    1997NAa  (3306) 102
Medium: 0.01-6.38 m K2CO3. Kso(KNpO2CO3(s)=K+NpO2+CO3)=-13.6.
Kso(K3NpO2CO3(s)=3K+NpO2+2CO3)=-15.9.
--------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C  3.0M C    M   K1=5.09   B2= 8.15  1986GRb  (3307) 103
                                      B3=10.46
K(3(NpO2)(CO3)3=(NpO2)3(CO3)6+3(CO3))=-10.1
K(2(UO2)(CO3)3+(NpO2)(CO3)3=(NpO2)(UO2)2(CO3)6+3(CO3))=-10.0
--------------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M C        K1=4.14   B2= 6.78  1985ITb  (3308) 104
Method: extraction of 339Np from buffered 1.0 M NaClO4 into
CH2Cl2/2-thenoyltrifluoroacetone/phen.
--------------------------------------------------------------------------------
NpO2+      EMF none   25°C  0.0  U T H    K1=4.6    B2=7.0    1984LEa  (3309) 105
```

```
                                        B3=8.5
100 C: K1=7, B2=9, B3=10.9; 150 C: K1=8, B2=10, B3=13.4.  Evaluated data
-------------------------------------------------------------------------
NpO2+      gl  NaClO4 25°C  1.0M U        K1=1.49   B2= 7.11  1983MAc  (3310) 106
                                        B3=8.53
Ks=-10.14. K(NpO2+H2O=NpO2OH+H)=-9.12
-------------------------------------------------------------------------
NpO2+      oth R4N.X  20°C 0.25M U                    1978MPa  (3311) 107
                                        K(NpO2+HL)=2.15
                                        K(NpO2+2HL)=3.66
Method: Coprecipitation.
Medium: NH4Cl.
-------------------------------------------------------------------------
NpO2+      oth oth/un   ?  0.15M U  I                 1963MMb  (3312) 108
                                        K(NpO2+HL)=2.17
K=2.43(I=0 corr.)
*************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
NpO2+      EMF none   25°C  0.0  U T H    K1=-0.4        1984LEa  (5309) 109
At 100 C: K1=0; 150 C: K1=0. Evaluated data
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 2.00M U        K1=-0.42       1979RGa  (5310) 110
-------------------------------------------------------------------------
NpO2+      EMF NaClO4 25°C  4.0M U        K1=-2.5   B2=-1.55  1971DCb  (5311) 111
-------------------------------------------------------------------------
NpO2+      ix  NaClO4 25°C  2.0M U        K1=-0.29       1964GSb  (5312) 112
Method:cation exchange. Medium: HClO4
*************************************************************************
F-                     HL    Fluoride         CAS 7644-39-3  (201)
Fluoride;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M C        K1=1.39   B2= 2.07  1985ITa  (7063) 113
Method: extraction of 339Np from buffered 1.0 M NaClO4 into
CH2Cl2/2-thenoyltrifluoroactone/phen.
-------------------------------------------------------------------------
NpO2+      EMF none   25°C  0.0  U T H    K1=1.0         1984LEa  (7064) 114
100 C: K1=2.2; 150 C: K1=2.8.  Evaluated data
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 2.00M U        K1=0.99        1979RGa  (7065) 115
*************************************************************************
IO3-                   HL    Iodate           CAS 7782-68-5  (1257)
Iodate;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
```

NpO2+ dis NaClO4 25°C 2.00M U K1=0.32 1979RGa (8539) 116

NpO2+ sol none 25°C 0.0 U 1972BBg (8540) 117
Kso(NpO2L(H2O)2)=-4.91

****

NO2- HL Nitrite CAS 7782-77-6 (635)
Nitrite;

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

---

NpO2+ dis NaClO4 25°C 2.00M U K1=0.05 1979RGa (9392) 118

****

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

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

---

NpO2+ dis NaClO4 25°C 4.0M U K1=-1.6 B2=-1.4 1971DCb (9822) 119

NpO2+ dis NaClO4 20°C 8.0M U K1=-0.28 1970LKa (9823) 120
Medium: HClO4

NpO2+ ix NaClO4 25°C 2.0M U K1=-0.25 1964GSb (9824) 121

****

N3- HL Azide CAS 7782-79-8 (441)
Azide;

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

---

NpO2+ sp oth/un 25°C 5.00M U K1=1.08 B2=1.85 1978MMd (10249) 122
B3=2.23

****

OH- HL Hydroxide (57)
Hydroxide;

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

---

NpO2+ gl R4N.X 25°C 1.12M C T H 2004RSa (11809) 123
*K1=-9.01
*B2=-18.95
*K1=-8.98 (I=0)
*B2=-19.22 (I=0)
In 1.12 m Me4NCl. By spectrometry, *K1=-9.0, *B2=-18.85. Data for 10-85 C
Calorimetry: DH(*K1)=31.6 kJ m-1, DH(*B2)=84.1. Values at I=0 from SIT.

NpO2+ sol NaCl 23°C 3.0M M K1=4.3 B2= 7.10 1996GSc (11810) 124
B3=9.2
Kso(Na(NpO2)CO3)=-9.4
Method: solubility of Na(NpO2)CO3 in NaCl, NaClO4 and Na2CO3 solutions.

Pitzer parameters used. At I=0.1 M, Kso(Na(NpO2)CO3)=-10.4.

NpO2+ oth KNO3 25°C 0.10M C I K1=6.92 1988NTb (11811) 125
K(NpO2+OH=NpO2(OH))=6.0
K(NpO2+2OH=NpO2(OH)2)=9.9
Method: paper electrophoresis using 237Np(V). Medium: KNO3, 0.005-0.10 M
At I=0.005, K(NpO2+OH=NpO2OH)=5.7; K(NpO2+2OH=NpO2(OH)2)=9.2.

NpO2+ oth NaClO4 25°C 0.1M U 1987RMb (11812) 126
K[NpO2(OH)+H]=10.45
K[NpO2(OH)2+2H)=21.95
Method: electromigration

NpO2+ gl NaClO4 25°C 1.0M U 1985LRa (11813) 127
K(NpO2+OH)=2.33
K(NpO2+2OH)=4.89

NpO2+ EMF none 25°C 0.0 U T H 1984LEa (11814) 128
*K(NpO2+H2O=NpO2(OH)+H)=-8.9
100 C: *K=-7.6; 150 C: *K=-7.2. Evaluated data

NpO2+ con oth/un 23°C .02M U 1976SKa (11815) 129
*K(NpO2=NpO2(OH)+H)=-8.91
By spectroscopy, *K(NpO2=NpO2(OH)+H)=-8.89

NpO2+ sol oth/un 20°C U 1971MOd (11816) 130
Ks(NpO2(OH)s=NpO2(OH))=-5.1
Kso(NpO2(OH)s=NpO2+OH)=-9.0

NpO2+ sp oth/un 25°C 8.00M U T H 1967MSf (11817) 131
K(NpO2+Rh(III))=0.52
Medium: 8M MgClO4. K=0.37(35 C), 0.33(50 C). DH=-15.0 kJ mol-1, DS=-42

NpO2+ sp oth/un 50°C 5.00M U TIH 1964SUc (11818) 132
K(NpO2 + Cr+++)=0.33
Medium: (Y,H)ClO4. In (Mg,H)ClO4: K=0.4(25 C), 0.43(35 C), 0.30(50 C).
DH=-13.8 kJ mol-1, DS=-38 J K-1 mol-1

NpO2+ EMF NaClO4 25°C 3.0M U 1961SHb (11819) 133
K(NpO2+UO2=NpO2UO2)=-0.16

NpO2+ gl oth/un 25°C 0.10M U 1949KNa (11820) 134
*K1 ca.-8.9
Kso(NpO2(OH)2(s)) < -9.2

****

O2-- H2L Peroxide CAS 7772-84-1 (2813)
Peroxide; -O.O-

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

---

```
NpO2+      gl  oth/un  1°C  var  U                        1974MUb (12691) 135
                                          K(NpO2L+2HL=NpO2L3+2H)=21.8
K(2NpO2+H2L=(NpO2)2L(s)+2H)=5.8; K((NpO2)2L(s)+H2L=2NpO2L+2H)=20.9
**************************************************************************
PO4---                H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M C                        1985ITa (13273) 136
                                          K(NpO2+H2PO4)=1.04
                                          K(NpO2+2H2PO4)=1.87
                                          K(NpO2+HPO4)=2.11
                                          K(NpO2+2HPO4)=3.43
Method: extraction of 339Np from buffered 1.0 M NaClO4 into
CH2Cl2/2-thenoyltrifluoroactone/phen.
--------------------------------------------------------------------------
NpO2+      EMF none   25°C  0.0  U T H                   1984LEa (13274) 137
                                          K(NpO2+H2PO4)=0.6
                                          K(NpO2+HPO4)=3.5
At 150 C: K(NpO2+H2PO4)=0, K(NpO2+HPO4)=7. Evaluated data
--------------------------------------------------------------------------
NpO2+      ix  NaClO4 25°C 0.10M U                        1984RDa (13275) 138
                                          Keff(NpO2+HL)=3.11 (pH 7)
--------------------------------------------------------------------------
NpO2+      sol oth/un 20°C 1.00M U        K1=5.78         1979MPc (13276) 139
--------------------------------------------------------------------------
NpO2+      oth R4N.X  20°C 1.00M U        K1=5.78         1978MPa (13277) 140
                                          K(NpO2+HPO4)=2.90, 0.1M NH4Cl
Medium: NH4Cl. Method: Coprecipitation
--------------------------------------------------------------------------
NpO2+      ix  R4N.X  20°C 0.20M U  I                     1964MPc (13278) 141
                                          K(NpO2+HL)=2.85
                                          K(NpO2+H2L)=0.81
Medium: NH4ClO4. At I=0 corr: K(NpO2+HL)=3.38
--------------------------------------------------------------------------
NpO2+      oth oth/un   ?  0.20M U  I                     1964PCa (13279) 142
                                          K(NpO2+HL)=2.85
K(NpO2+HL)=3.38(I=0 corr)
**************************************************************************
SCN-                    HL    Thiocyanate      CAS 463-56-9  (106)
Thiocyanate;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 2.00M U        K1=0.32         1979RGa (15193) 143
--------------------------------------------------------------------------
NpO2+      sp  oth/un 25°C 5.00M U        K1=0.86   B2=1.05   1978MMd (15194) 144
                                          B3=0.89
**************************************************************************
```

SO3-- H2L Sulfite CAS 7782-99-2 (801)
Sulfite;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sol oth/un 20°C 1.00M U K1=1.50 B2=3.01 1979MPc (15469) 145

NpO2+ oth R4N.X 20°C 1.00M U K1=1.50 B2=3.01 1978MPa (15470) 146
Method: Coprecipitation.
Medium: NH4Cl.

NpO2+ sp oth/un 25°C 1.0M U K1=2.6 B2=3.60 1972BBe (15471) 147
Medium:NaNO2

NpO2+ ix oth/un ? 0.0 U K1=2.15 B2=3.00 1965MMc (15472) 148
****
SO4-- H2L Sulfate CAS 7664-93-9 (15)
Sulfate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 2.00M U K1=0.61 1990RNb (16417) 149

NpO2+ dis NaClO4 25°C 1.0M C K1=0.76 1985ITa (16418) 150
Method: extraction of 339Np from buffered 1.0 M NaClO4 into
CH2Cl2/2-thenoyltrifluoroactone/phen.

NpO2+ EMF none 25°C 0.0 U T H K1=0.4 1984LEa (16419) 151
100 C: K1=0.9; 150 C: K1=0.9. Evaluated data

NpO2+ sol oth/un 20°C 1.50M U K1=1.04 1979MPc (16420) 152

NpO2+ dis NaClO4 25°C 2.00M U K1=0.45 1979RGa (16421) 153

NpO2+ oth R4N.X 20°C 1.55M U K1=1.04 1978MPa (16422) 154
Medium: NH4Cl. Method: Coprecipitation (Fe(OH)3)
****
C2H2O2Cl2 HL CAS 79-43-6 (1282)
Dichloroethanoic acid; Cl2CH.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 2.00M U K1=-0.48 1990RNb (18398) 155
****
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
---
NpO2+ sp NaClO4 23°C 1.00M U K1=3.52 B2=6.09 1987CNa (18995) 156

```
--------------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U        K1=3.44   B2=5.83   1983ITa (18996) 157
--------------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U        K1=3.42   B2= 5.66  1982ITa (18997) 158
--------------------------------------------------------------------------------
NpO2+      EMF NaClO4 20°C 1.00M U        K1=3.74   B2=6.31   1972MBg (18998) 159
--------------------------------------------------------------------------------
NpO2+      ix  oth/un 20°C 0.05M C        K1=7.36   B2=11.40  1963ZAa (18999) 160
                                          K3=2.70
Medium: 0.05 M NH4ClO4. Method: cation exchange using 239Np.
--------------------------------------------------------------------------------
NpO2+      ix  R4N.X  20°C 0.05M U        K1=4.04   B2=11.40  1961ZMa (19000) 161
                                          K(NpO2+HL)=2.70
Medium: NH4ClO4. 18-22 C
--------------------------------------------------------------------------------
NpO2+      sp  oth/un 25°C 0.50M U        K1=3.30   B2=7.07   1953GKa (19001) 162
********************************************************************************
C2H3O2Br               HL    Bromoacetic acd  CAS 79-08-3  (1309)
Bromoethanoic acid; Br.CH2.COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 2.00M U        K1=0.11        1990RNb (19280) 163
********************************************************************************
C2H3O2Cl               HL    Chloroacetic     CAS 79-11-8  (34)
Chloroethanoic acid; ClCH2.COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 2.00M U        K1=0.00        1990RNb (19372) 164
********************************************************************************
C2H3O2I                HL    Iodoacetic acid  CAS 64-69-7  (1312)
Iodoethanoic acid; ICH2.COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 2.00M U        K1=0.14        1990RNb (19417) 165
********************************************************************************
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
--------------------------------------------------------------------------------
NpO2+      dis NaCl   25°C 0.30M C  I     K1=1.05        1999MBb (20084) 166
Method: Solvent extraction into n-heptane, 0.05 M di-(2-ethylhexyl)-
phosphoric acid. Data for 0.3-5.0 m NaCl.
--------------------------------------------------------------------------------
NpO2+      oth NaClO4 25°C 0.30M U        K1=0.96   B2=1.57   1990RDa (20085) 167
Method: electromigration
--------------------------------------------------------------------------------
```

```
NpO2+      sp  NaClO4 25°C 2.00M U        K1=0.87        1990RNb (20086) 168
--------------------------------------------------------------------------
NpO2+      sol oth/un 25°C 1.00M U        K1=1.07   B2=2.20   1979MPb (20087) 169
Medium: ammonium oxalate
**************************************************************************
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
--------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 2.00M U        K1=1.43   B2=1.90   1990RNb (20598) 170
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U        K1=1.21   B2=1.70   1983ITa (20599) 171
--------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=1.51        1969ESc (20600) 172
**************************************************************************
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
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U        K1=3.59   B2= 5.71  1994TSa (21652) 173
                                         K(NpO2+HL)=1.02
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U        K1=3.17   B2=5.47   1983ITa (21653) 174
--------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M C        K1=3.31   B2= 5.44  1968EWa (21654) 175
**************************************************************************
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
--------------------------------------------------------------------------
NpO2+      sp  NaClO4 23°C 1.00M U        K1=2.53   B2=6.73   1987CNa (24519) 176
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U        K1=2.25   B2=3.61   1983ITa (24520) 177
--------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U        K1=2.26   B2= 3.26  1982ITa (24521) 178
                                         K(NpO2+HL)=1.22
                                         K(NpO2+2HL)=1.91
--------------------------------------------------------------------------
NpO2+      EMF NaClO4 20°C 1.00M U        K1=2.75        1972MBg (24522) 179
**************************************************************************
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
--------------------------------------------------------------------------
NpO2+      dis NaCl   25°C 0.30M C  I     K1=1.78        1999MBb (25495) 180
Method: Solvent extraction into n-heptane, 0.05 M di-(2-ethylhexyl)-
```

phosphoric acid. Data for 0.3-5.0 m NaCl. At I=0.0, K1=1.70.

NpO2+	dis	NaClO4	25°C	1.00M	U	K1=1.11 B2=1.78	1983ITa (25496) 181
NpO2+	dis	NaClO4	25°C	1.0M	U	K1=1.09 B2= 1.60	1982ITa (25497) 182
NpO2+	sp	NaClO4	25°C	0.10M	U	K1=1.75	1969ESd (25498) 183

C3H7NO2 HL DL-Alanine CAS 302-72-7 (189)
DL-2-Aminopropanoic acid; H2N.CH(CH3).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference ExptNo
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=3.37 K(NpO2+HL)=1.30	1994TSa (26540) 184
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=3.30 B2=5.67	1983ITa (26541) 185

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
NpO2+	sp	NaClO4	23°C	1.00M	U		K1=1.89 B2=3.12	1987CNa (29113) 186
NpO2+	EMF	NaClO4	20°C	1.00M	U		K1=2.20	1972MBg (29114) 187

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
NpO2+	sp	NaClO4	23°C	1.00M	U		K1=1.51 B2=2.42	1987CNa (30012) 188
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=1.13 B2=1.50 B3=2.35	1983ITa (30013) 189
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=1.29 B2= 1.89 K(NpO2+HL)=1.03 K(NpO2+2HL)=1.63	1982ITa (30014) 190
NpO2+	EMF	NaClO4	20°C	1.00M	U		K1=1.72	1972MBg (30015) 191

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
NpO2+	gl	NaClO4	25°C	0.50M	U		K1=1.18	1990RNc (30225) 192

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
NpO2+	gl	NaClO4	25°C	0.50M	U		K1=3.72		1990RNc (30907)	193

****

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
NpO2+	ix	R4N.X	20°C	0.50M	U		K1=2.32	B2=4.30	1961MMb (31323)	194
							B3=6.18			
							K(NpO2+HL)=2.36			

Medium: NH4ClO4

****

C4H6O6 H2L meso-Tartaric CAS 147-73-9 (91)
meso-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	ix	oth/un	20°C	0.05M	C		K1=6.18	B2=10.48	1963ZAa (31430)	195
							K3=2.32			
							K4=2.36			

Medium: 0.05 M NH4ClO4. Method: cation exchange using 239Np.

****

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
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=2.63	B2=5.32	1983ITa (31908)	196
							K(NpO2+HL)=0.70			
							K(NpO2+2HL)=1.32			

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=6.42	1994TSa (32323)	197
NpO2+	gl	NaClO4	25°C	0.50M	U		K1=5.81	1990RNc (32324)	198
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=5.64	1983ITa (32325)	199
NpO2+	gl	NaClO4	20°C	1.00M	U		K1=8.72	1973CBc (32326)	200
NpO2+	sp	R4N.X	25°C	0.10M	U		K1=6.27	1970EWa (32327)	201

K(NpO2+HL)=1.35

Medium: NH4ClO4

****

C4H8O3 HL CAS 594-61-6 (81)

2-Hydroxy-2-methylpropanoic acid; (CH3)2C(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	sp	NaClO4	25°C	2.00M	U		K1=1.80	1990RNb (33496)	202
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=1.48 B2=2.19	1983ITa (33497)	203
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=1.35 B2= 1.88	1982ITa (33498)	204
NpO2+	ix	NaClO4	?	0.05M	U		K1=1.99 B2=2.90 B3=3.53	1971MOc (33499)	205

****

C4H8O3 HL CAS 965-70-8 (423)

2-Hydroxybutanoic acid; CH3.CH2.CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=1.13	1983ITa (33579)	206
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=1.10 B2= 1.50	1982ITa (33580)	207
NpO2+	sp	NaClO4	25°C	0.10M	U		K1=1.62	1969ESc (33581)	208

****

C4H8O3 HL CAS 300-85-6 (30)

3-Hydroxybutanoic acid; CH3.CH(OH).CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=0.55 B2=0.98	1983ITa (33624)	209
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=0.67 B2= 0.90	1982ITa (33625)	210

****

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
NpO2+	sp	NaClO4	25°C	0.10M	U		K1=1.94	1972GKb (35928)	211

****

C5H5O2F3 HL CAS 367-57-7 (163)

1,1,1-Trifluoropentane-2,4-dione; CF3.CO.CH2.CO.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	sp	NaClO4	25°C	0.10M	U		K1=2.57	1972GKb (37059)	212

****
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
---
NpO2+ sp NaClO4 25°C 0.10M U T K1=4.08 B2=7.00 1972GKb (38049) 213
K1(18 C)=4.33, K1(32 C)=4.01, B2(18 C)=7.56, B2(32 C)=6.96
****
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
---
NpO2+ dis NaClO4 25°C 1.00M U K1=1.27 B2=1.44 1983ITa (38338) 214
B3=2.45

NpO2+ dis NaClO4 25°C 1.0M U K1=1.18 B2= 1.42 1982ITa (38339) 215
K(NpO2+HL)=0.88
K(NpO2+2HL)=1.23

NpO2+ oth oth/un 25°C 0.10M U K1=1.43 1969EWa (38340) 216
K(NpO2+HL)=0.87
****
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
---
NpO2+ dis NaClO4 25°C 1.00M U K1=2.72 B2=5.13 1983ITa (39107) 217
K(NpO2+HL)=0.76
K(NpO2+2HL)=1.41
****
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
---
NpO2+ gl NaClO4 25°C 0.50M U K1=6.75 1990RNc (39270) 218

NpO2+ sp R4N.X 25°C 0.10M U K1=7.37 1970EWa (39271) 219
K(NpO2+HL)=1.28
Medium: NH4ClO4
****
C5H9N3O4S H2L CAS 16907-58-7 (2106)
Thiosemicarbazone-diethanoic acid; H2N.CS.NH.N(CH2.COOH)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 0.05M U 1988CDa (39572) 220

K(NpO2+H-1L=NpO2H-1L)=3.36

****

C5H10O3 HL CAS 3739-30-8 (3612)

2-Hydroxy-2-methylbutanoic acid, Methylethylglycolic acid; CH3.CH2.C(OH)(CH3)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=1.38	B2= 1.99	1982ITa (40260)	221

****

C5H10O3 HL CAS 4026-18-0 (422)

2-Hydroxy-3-methylbutanoic acid; CH3.CH2.C(OH)(CH3).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=1.60	B2=2.12	1983ITa (40271)	222

****

C5H10O3 HL CAS 617-31-2 (474)

2-Hydroxypentanoic acid; CH3.CH2.CH2.CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	sp	NaClO4	25°C	0.10M	U		K1=1.59		1969ESc (40284)	223

****

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
NpO2+	gl	NaClO4	25°C	0.50M	U		K1=3.04		1990RNc (42576)	224
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=3.45	B2=6.03	1983ITa (42577)	225
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=3.23	B2= 5.58	1982ITa (42578)	226

****

C6H5NO2 HL Nicotinic acid CAS 59-67-6 (419)

3-Pyridine-carboxylic acid; C5H4N.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=0.57		1983ITa (42679)	227

****

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
NpO2+	sp	NaClO4	25°C	2.00M	U		K1=2.49		1990RNb (46203)	228
NpO2+	sp	oth/un	25°C	0.05M	U		K1=2.87		1985SEa (46204)	229

```
NpO2+      ix  NaClO4 25°C 0.10M U                      1984RDa (46205) 230
                                       K1eff=4.84 (pH 7)
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U       K1=3.94   B2= 6.91  1982ITa (46206) 231
                                       K(NpO2+HL)=2.37
                                       K(NpO2+2HL)=3.41
-------------------------------------------------------------------------
NpO2+      ix  oth/un 20°C 0.05M C       K1=3.67   B2= 6.36  1963ZAa (46207) 232
Medium: 0.05 M NH4ClO4. Method: cation exchange using 239Np.
-------------------------------------------------------------------------
NpO2+      ix  R4N.X  20°C 0.05M U       K1=3.67        1961MMb (46208) 233
                                       K(NpO2+HL)=2.69
Medium: NH4ClO4. 18-22 C
*************************************************************************
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
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U       K1=6.48        1994TSa (46955) 234
-------------------------------------------------------------------------
NpO2+      gl  NaClO4 25°C 0.50M U       K1=7.51        1990RNc (46956) 235
-------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U       K1=6.08        1983ITa (46957) 236
-------------------------------------------------------------------------
NpO2+      ix  R4N.X  25°C 0.10M U    M T K1=6.81        1970EWa (46958) 237
                                       K(NpO2+HL)=1.77
                                       K(NpO2L+H2O=NpO2LOH+H)=-11.46
Medium: NH4ClO4
*************************************************************************
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
-------------------------------------------------------------------------
NpO2+      sp  oth/un   ?  0.10M U       K1=20.82  B2=33.59  1971EPb (48771) 238
-------------------------------------------------------------------------
NpO2+      sp  oth/un 25°C 0.10M U       K1=6.08        1969EWa (48772) 239
                                       K(NpO2+HL)=1.45
                                       K(NpO2L+H20=NpO2OHL+H)=-11.42
*************************************************************************
C6H12N2O4             H2L    N,N-EDDA        CAS 5835-29-0  (2333)
1,2-Diaminoethane-N,N-diethanoic acid; H2N.CH2.CH2.N(CH2.COOH)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
NpO2+      gl  NaClO4 25°C 0.50M U       K1=8.26        1990RNc (49305) 240
*************************************************************************
C6H12O3                HL    DiEtGlycolic    CAS 3639-21-2  (421)
2-Ethyl-2-hydroxybutanoic acid; (C2H5)2.C(OH).COOH
```

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=1.57		1983ITa (49463)	241
NpO2+	dis	NaClO4	25°C	1.0M	U		K1=1.59	B2= 2.07	1982ITa (49464)	242

C6H12O3 HL CAS 6064-63-7 (475)
2-Hydroxyhexanoic acid; CH3.CH2.CH2.CH2.CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	sp	NaClO4	25°C	0.10M	U		K1=1.63	1969ESc (49488)	243

C7H5NO4 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
NpO2+	gl	NaClO4	25°C	0.50M	U		K1=4.82		1990RNc (52791)	244
NpO2+	dis	NaClO4	25°C	1.00M	U		K1=7.07		1983ITa (52792)	245

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
NpO2+	gl	NaClO4	20°C	1.00M	U		K1=5.45	B2=9.81	1973MBb (53684)	246

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
NpO2+	sp	NaClO4	25°C	2.00M	U		K1=0.82	1990RNb (53847)	247

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
NpO2+	dis	NaClO4	25°C	1.0M	U	T	K1=0.84	1992TIb (54277)	248
NpO2+	sp	NaClO4	25°C	2.0M	U	T	K1=0.28	1990RNa (54278)	249

C7H6O6S H3L CAS 5965-83-3 (399)
5-Sulfosalicylic acid, 2-Hydroxy-5-sulfobenzoic; HO3S.C6H3(OH).COOH

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

---
NpO2+ sp NaClO4 25°C 2.0M U K1=0.17 1990RNa (55034) 250
****
C7H11NO6 H3L CAS 40199-58-4 (3165)
N-(2'-Carboxyethyl)iminodiethanoic acid; HOOC.CH2.CH2.N(CH2.COOH)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ ix R4N.X 25°C 0.10M U K1=7.00 1970EWa (56883) 251
K(NpO2+HL)=2.35
K(NpO2L+H2O=NpO2LOH+H)=-11.57
Medium: NH4ClO4
****
C8H5O2F3S HL TTA CAS 326-91-0 (165)
4,4,4-Trifluoro-1-(2-thienyl)butane-1,3-dione; F3C.CO.CH2.CO.C4H3S

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 0.10M U K1=2.89 B2=5.48 1972GKb (58661) 252

NpO2+ dis oth/un RT 0.10M C K1=1.99 1971CLa (58662) 253
K(NpO2+HL=NpO2L+H)=-4.29
K(NpO2+2HL=NpO2HL2+H)=-3.48
Extraction from edta solution, pH 5.3, I=0.1 M, into isoamyl alcohol.
****
C8H5O3F3 HL CAS 15788-03-1 (3215)
1,1,1-Trifluoro-3-2'-furoylacetone; F3C.CO.CH2.CO.C4H3O

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 0.10M U K1=2.23 B2=4.64 1972GKb (58716) 254
****
C8H6O4 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
---
NpO2+ sp NaClO4 25°C 2.00M U K1=1.68 1990RNb (58999) 255

NpO2+ EMF NaClO4 20°C 1.0M U K1=2.22 1972MBg (59000) 256
****
C8H8O2S HL 2-Thenoylaceton CAS 3151-27-2 (3224)
2-Thenoylacetone, 1-(2'-Thienyl)butane-1,3-dione; C4H3S.CO.CH2.CO.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2+ sp NaClO4 25°C 0.10M U K1=4.23 B2=7.41 1972GKb (59639) 257
****
C8H8O3 HL Furoylacetone CAS 67748-89-4 (3192)
Furoylacetone; C4H3O.CO.CH2.CO.CH3

```
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=4.40   B2=7.85   1972GKb (60008) 258
*******************************************************************************
C8H9N3OS              H2L                      CAS 5351-90-6  (2103)
Salicylidenethiosemicarbazone; HO.C6H4.CH:N.NH.CS.NH2
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.05M U        K1=11.85       1987CDb (60558) 259
                                         K(NpO2+HL=NpO2HL)=5.14
*******************************************************************************
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
-------------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C  1.0M U        K1=5.67   B2=10.11  1994TSa (64569) 260
-------------------------------------------------------------------------------
NpO2+      dis NaClO4 25°C 1.00M U        K1=5.42   B2=10.21  1983ITa (64570) 261
*******************************************************************************
C9H11N3OS             H2L                        (2104)
S-Methyl-(salicylidene)isothiosemicarbazone; HO(C6H4)CH:N.N:C(NH2)SCH3
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.05M U        K1=13.33       1987CDb (66475) 262
                                         K(NpO2+HL=NpO2HL)=8.42
*******************************************************************************
C10H7O2F3              HL                      CAS 326-06-7  (196)
3-Benzoyl-1,1,1-trifluoroacetone; CF3.CO.CH2.CO.C6H5
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=4.11   B2=7.86   1972GKb (69159) 263
*******************************************************************************
C10H10O2               HL    Benzoylacetone   CAS 93-91-4  (197)
1-Phenylbutane-1,3-dione; C6H5.CO.CH2.CO.CH3
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=4.99   B2=8.86   1972GKb (70759) 264
*******************************************************************************
C10H14N5O7P           H2L    AMP-3            CAS 84-21-9  (2438)
Adenosine-3'-monophosphoric acid, 3-Adenylic acid;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      gl  NaClO4 25°C 0.10M U        K1=2.51        1993RNa (72246) 265
```

****

C10H15N5O10P2 H3L ADP CAS 20398-34-9 (2181)
Adenosine-5'-diphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	gl	NaClO4	25°C	0.10M	U		K1=2.97	1993RNa (73010)	266
							B((NpO2)HL)=7.48		
							K(NpO2+HL)=1.07		

****

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
NpO2+	dis	NaClO4	25°C	1.0M	U			1994TSa (74030)	267
							K(NpO2+HL)=4.89		
NpO2+	dis	NaClO4	25°C	1.00M	U			1983ITa (74031)	268
							K(NpO2+HL)=4.46		
NpO2+	dis	oth/un	RT	0.10M	C		K1=9.05	1971CLa (74032)	269

Extraction with tta from edta solution, pH 5.3, I=0.1 M, into isoamyl alcohol.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	ix	R4N.X	25°C	0.10M	U		K1=7.33	1970EWa (74033)	270
							K(NpO2+HL)=5.30		
							K(NpO2L+H2O=NpO2LOH+H)=-11.51		

Medium: NH4ClO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	ix	oth/un	20°C	0.05M	C		K1=9.69	1963ZAa (74034)	271

Medium: 0.05 M NH4ClO4. Method: cation exchange using 239Np.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	ix	R4N.X	20°C	0.05M	U		K1=9.7	1961ZMa (74035)	272

Medium: NH4ClO4

****

C10H16N5O13P3 H4L ATP CAS 56-65-5 (403)
Adenosine-5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2+	gl	NaClO4	25°C	0.10M	U		K1=3.73	1993RNa (74807)	273
							B((NpO2)HL)=8.87		
							K(NpO2+HL)=2.36		

****

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

```
NpO2+      ix  R4N.X  25°C 0.10M U        K1=6.87        1970EWa (75464) 274
                                         K(NpO2+HL)=4.06
                                         K(NpO2L+H2O=NpO2LOH+H)=-11.37
Medium: NH4ClO4
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=6.08        1969EWa (75465) 275
                                         K(NpO2+HL)=1.45
                                         K(NpO2L+H2O=NpO2LOH+H)=-11.42
*******************************************************************************
C11H8O4                HL                    CAS 94147-09-8  (3348)
Difuroylmethane; C4H3O.CO.CH2.CO.C4H3O
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  NaClO4 25°C 0.10M U        K1=4.03   B2=7.06   1972GKb (77213) 276
*******************************************************************************
C12H12N2O2             HL                    CAS 4173-74-4  (4915)
1-Phenyl-3-methyl-4-acetylpyrazol-5-one;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  oth/un 25°C 0.10M U        K1=2.42   B2=4.69   1973BKc (81043) 277
*******************************************************************************
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
-------------------------------------------------------------------------------
NpO2+      ix  R4N.X    ?  0.05M U        K1=10.83       1971MOc (89347) 278
Medium: NH4Cl
*******************************************************************************
C16H16N2O2            H2L                   CAS 94-93-9  (2101)
N,N'-Bis(salicylidene)ethylenediamine;(HO(C6H4)CH:NCH2-)2
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      sp  alc/w  25°C  50%  U        K1=7.5         1987CHa (93684) 279
*******************************************************************************
C16H35O4P              HL                    CAS 298-07-7  (1625)
Di-(2-ethylhexyl)-phosphoric acid; (C2H5C6H12O)2P(O)OH
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
NpO2+      dis oth/un 25°C  2.0M U        K1=-0.09  B2=-0.68  1989BFe (95512) 280
In 2.0 M HCl; for 15 C K1=-0.11; K2=-0.62;
for 35 C K1=-0.004; K2=-0.59
*******************************************************************************
e-                     HL    Electron          (442)
Electron;
-------------------------------------------------------------------------------
```

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2++	oth	none	25°C	0.0	M		1999KRa	(731)	281
							K(NpO2+e)=19.62(1161 mV)		
Evaluation of literature data. K: NpO2+e=Np(V)									
NpO2++	sp	KCl	400°C	100%	U		1974LLa	(732)	282
							K=1.64		
Medium:(Li,K)Cl; K: NpO2++ + Cl=NpO2+ + 1/2Cl2(g)									
NpO2++	sp	none	40°C	0.00	U	T	1972SNe	(733)	283
							K=3.4		
K: NpO2++ +1/2HNO2+1/2H2O=NpO2+ +3/2H+ +1/2NO3-. K=3.2(65 C)									
NpO2++	sp	oth/un	22°C	5.50M	U	I	1971EGd	(734)	284
							K(Np(VI)+Np(IV)=2Np(V))=-0.41		
Medium:C M HNO3 at C=5.5; K=-0.85(C=6.0),-1.25(C=6.5),-1.70(C=7.0),-2.11 (C=7.5),-2.54(C=8.0)									
NpO2++	sp	oth/un	22°C	5.50M	U	I	1971EGd	(735)	285
							K(Np(VI)+Np(IV)=Np(V))=1.70		
Medium:C M HClO4. At C=5.5. K=1.05(C=6.0), 0.40(C=6.5), 0.10(C=7.0), -0.90(C=7.5), -1.54(C=8.0)									
NpO2++	dis	oth/un	25°C	1.00M	U	IH	1971GOa	(736)	286
							K=3.50(C=1.00)		
Medium:C M HNO3 at C=1.00; K: NpO2++ +1/2HNO2+1/2H2O=NpO2+ +3/2H + 1/2NO3-; K=3.37(C=1.95). Also data at 35 C and 50 C as well as DH and DS at 35 C									
NpO2++	dis	oth/un	25°C	2.95M	U	IH	1971GOa	(737)	287
							K=3.18(C=2.95)		
Medium: C M HNO3 at C=2.95; K:NpO2++ +1/2HNO2+1/2H2O=NpO2+ +3/2H+ +1/2NO3-; K=3.03(C=3.85. Also data at 35 C and 50 C as well as DH and DS at 35 C									
NpO2++	EMF	none	25°C	0.00	U		1970BCc	(738)	288
							K=20.89(1.236V)		
K: NpO2++ + e. Method:emf and from survey of literature data									
NpO2++	sp	oth/un	23°C	13.6M	U		1970KMb	(739)	289
							B(Np(VII)+Np(V)=2Np(VI))=1.6		
Medium: NaOH									
NpO2++	EMF	oth/un	25?°C	0.97M	U	I	1970PKa	(740)	290
							K=9.99(0.591V)		
Medium: C M NaOH. At C=0.97; K: Np(VII) + e=Np(VI). K=8.38(0.496V,C=3.1), 7.40(0.438V,C=4.6), 5.75(0.340V,C=7.3)									
NpO2++	EMF	oth/un	25?°C	10.2M	U	I	1970PKa	(741)	291
							K=3.89(0.230V)		
Medium: C M NaOH. At C=10.2; K: Np(VII) + e=Np(VI). K=3.06(0.181V,C=12.0),									

2.25(0.133V,C=14.0)

NpO2++ EMF oth/un 25°C 1.00M U 1970SKc (742) 292
K=9.93(587.5mV)
Medium:NaOH; K: Np(VII) + e=Np(VI); (suggest:NpO5--- + 3H2O + e=NpO2(OH)4-- + 2OH-)

NpO2++ EMF oth/un 25°C 1.00M U 1970ZCa (743) 293
K=9.84(582.1mV)
Medium:NaOH; K: NpO5--- + H2O + e=NpO4-- + 2OH-

NpO2++ EMF oth/un 25°C 1.00M U 1969SGe (744) 294
K=10.3(0.61V)
Medium:KOH; K: NpO5--- + H2O + e=NpO4-- + 2OH-

NpO2++ sol oth/un 20°C 0.50M U I 1969SGe (745) 295
Ks(Co(NH3)6+++.NpO5---)=-7.8
Medium:C M NaOH at C=0.5;Ks(Co(NH3)6.NpO5(s)=Co(NH3)6+++ + NpO5---)=-7.3 (C=1);data also for Ks((Ba++)3(NpO5---)2(s)=3Ba++ + 2NpO5---)=-17.7(C=1)

NpO2++ oth none 25°C 0.0 U 1969SGe (746) 296
K(NpO2(VII)+e=NpO2) > 35.0
Method:Estimated data

NpO2++ EMF oth/un 25°C 0.20M U I 1969SMk (747) 297
K=11.8(0.70V)
Medium: C M NaOH at C=0.2; K: Np(VII) + e=Np(VI). K=11.2(0.66V,C=0.5), 10.1 (0.60V,C=1.0), 8.1(0.48V,C=5.0), 6.4(0.38V,C=10)

NpO2++ EMF NaClO4 25°C 2.0M U I 1962ZSa (748) 298
K(NpO2+e)=19.20(1136.0 mV)
K: NpO2+e=NpO2(V). In HClO4: K=19.04(1126.4 mV), LiClO4: K=19.09(1129.4 mV)

NpO2++ EMF NaClO4 25°C 1.0M U 1961SHb (749) 299
K(NpO2+e)=19.21(1136.4 mV)

NpO2++ EMF KNO3 25°C 0.25M U I 1958SPa (750) 300
K(NpO2+e)=19.58(1158 mV)
Medium: HNO3. I=1: K=19.49(1153 mV), I=8: K=19.27(1140 mV) plus others
In 0.5 M H2SO4: K=18.16(1074 mV), 1 M HClO4: K=19.31(1142 mV)

NpO2++ EMF NaClO4 25°C 1.03M U T 1952CHa (751) 301
K(NpO2+e)=19.22(1137.3 mV)
Medium: HClO4. 15.2 C: K=19.93(1140.3 mV), 35.4 C: K=18.54(1134.9 mV)

NpO2++ EMF KCl 25°C 1.0M U 1949HMa (752) 302
K(NpO2+e)=19.3(1.14 V)
****
CO3-- H2L Carbonate CAS 465-79-6 (268)
Carbonate;

```
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2++     oth none   25°C  0.0  M                        1999KRa  (3313) 303
                                       K(NpO2+OH+2CO3)=6.0
                                       K(NpO2+2OH+CO3)=7.1
Evaluation of literature data.
--------------------------------------------------------------------------------
NpO2++     cal oth/un 25°C       U                        1988USa  (3314) 304
                                       DH(NpO2+3L)=-41.9 kJ mol-1
Ionic strength is variable within 0.27-1.08
--------------------------------------------------------------------------------
NpO2++     EMF NaClO4 22°C  3.0M C                        1986GRa  (3315) 305
                                       K(3NpO2L3=(NpO2)3+3L)=-10.1
K(2UO2L3 + NpO2L3=(UO2)2(NpO2)L6+3L)=-10.0
--------------------------------------------------------------------------------
NpO2++     cal oth/un 25°C  1.6M C   H                    1985SFa  (3316) 306
Medium: 1.6 M (Na2CO3 + Na2SO4). DH(B3)=-50 kJ mol-1.
--------------------------------------------------------------------------------
NpO2++     EMF none   25°C  0.0  U T H    B2=14.0         1984LEa  (3317) 307
                                       B3=20.4
100 C: B2=16, B3=20; 150 C: B2=16, B3=21. Evaluated data
--------------------------------------------------------------------------------
NpO2++     gl  NaClO4 25°C 1.00M U                         1984MAa  (3318) 308
                                       B(2,1,3)=18.60
                                       B(1,2,0)=17.71
                                       B(1,3,0)=30.18
B(p.q.r): pNpO2+qCO2(g)+rH2O=(NpO2)p(CO2)q(OH)r-q+(q+r)H
********************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2++     EMF none   25°C  0.0  U T H    K1=-0.2         1984LEa  (5313) 309
At 100 C: K1=1; 150 C: K1=2. Evaluated data
--------------------------------------------------------------------------------
NpO2++     dis NaClO4 25°C  4.0M U        K1=-0.05        1974DCa  (5314) 310
--------------------------------------------------------------------------------
NpO2++     dis NaClO4 25°C  4.0M U        K1=-0.16        1971DCb  (5315) 311
--------------------------------------------------------------------------------
NpO2++     EMF NaClO4 25°C 0.40M U        K1=-0.34        1970AWb  (5316) 312
Medium: HClO4, I=0.3 to 0.5 M
--------------------------------------------------------------------------------
NpO2++     sp  NaClO4 25°C  2.0M U        K1=-0.21        1962STb  (5317) 313
--------------------------------------------------------------------------------
NpO2++     kin NaClO4  0°C  3.0M U T H    K1=0.21         1955CSb  (5318) 314
Medium: HClO4. Or: K1=0.10,K2=-0.80. DH(K1)=-36 kJ mol-1 (or -29, DH(K2)=15)
At 4.78 C:K1=0.06(or 0.00, K2=-0.74) 9.84 C: K1=-0.06 (or -0.09, K2=-0.70)
********************************************************************************
```

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2++	ISE	NaClO4	21°C	1.0M	C	I	K1=3.94	B2= 6.82	1985SCe (7066)	315
							B3=8.49			
At I=0.10 M NaClO4, K1=4.18, B2=6.96, B3=9.64.										
NpO2++	EMF	none	25°C	0.0	U	T H	K1=4.6	B2=7.8	1984LEa (7067)	316
100 C: K1=4.8, B2=8.1; 150 C: K1=5.2, B2=8.5. Evaluated data										
NpO2++	dis	NaClO4	25°C	2.00M	U		K1=1.12		1976PRa (7068)	317
NpO2++	EMF	none	25°C	0.0	U		K(NpO2+HF=NpO2F+H)=1.41		1970AWa (7069)	318
							K(NpO2F+HF=NpO2F2+H)=0.04			
NpO2++	dis	NaClO4	21°C	1.0M	U		K(NpO2+HF=NpO2F+H)=0.93		1968ABc (7070)	319
							K(NpO2+2HF=NpO2F2+2H)=1.11			
NpO2++	ix	NaClO4	25°C	2.11M	U	I	K1=5.92		1968KKd (7071)	320
							K(NpO2+HF=NpO2F+H)=2.11			
Method:cation exchange. Medium: HClO4. At I=1.04: K(NpO2+HF=NpO2F+H)=2.20, K1=5.37										

****

IO3- HL Iodate CAS 7782-68-5 (1257)
Iodate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2++	sp	NaClO4	25°C	0.30M	U		K1=0.61	1972BBg (8541)	321
Medium: HClO4									

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2++	sp	oth/un	25°C	1.00M	U		B2=4.74	1976VAb (9825)	322
NpO2++	dis	NaClO4	25°C	4.0M	U		K1=-0.7	1971DCb (9826)	323
NpO2++	EMF	NaClO4	25°C	0.40M	U	I	K1=-0.98	1970AWb (9827)	324
Medium: HClO4. K1=-0.89(I=0.6)									
NpO2++	dis	NaClO4	20°C	8.0M	U		K1=-0.24 B2=0.20	1970LKa (9828)	325
Medium: HClO4									

```
NpO2++     sp  NaClO4 25°C  2.0M U        K1=-0.4        1966RYa  (9829) 326
********************************************************************************
OH-                    HL    Hydroxide          (57)
Hydroxide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2++     EMF none   25°C  0.0  U T H                    1984LEa (11821) 327
                                       *K(NpO2+H2O=NpO2(OH)+H)=-5.2
                                       *B(2,2)=-6.4
                                       *B(3,5)=-17.5
100 C, values are: -3.7, -5.0, -14.0; 150 C: -3.0,-4.6,-12.8. Evaluated data
--------------------------------------------------------------------------------
NpO2++     con none   23°C  0.0  C                        1983SGe (11822) 328
                                       *K1=-5.45
--------------------------------------------------------------------------------
NpO2++     EMF NaClO4 20°C 1.00M U                        1974MCa (11823) 329
                                       Kso=-14
Np: NpO3+. Kso: NpO3(OH)(s)=NpO3 + OH
--------------------------------------------------------------------------------
NpO2++     gl  NaClO4 25°C 1.00M U                        1972CMa (11824) 330
                                       *K1(NpO2+H2O=NpO2OH+H)=-5.17
                                       *B(2,2)=-6.68
                                       *B(3,5)=-18.25
*B(m,n)(mNpO2 + nH2O=(NpO2)m(OH)n + nH)
--------------------------------------------------------------------------------
NpO2++     sol none   20°C 0.00  U        K1=10.63  B2=19.20  1971MOd (11825) 331
                                       B3=23.49
--------------------------------------------------------------------------------
NpO2++     sol oth/un   ?        U        B2=21.4        1971MOd (11826) 332
--------------------------------------------------------------------------------
NpO2++     gl  oth/un 25°C    ?  U                        1948KNa (11827) 333
                                       Kso(NpO2(OH)2)=-21.6?
********************************************************************************
PO4---                 H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
NpO2++     EMF none   25°C  0.0  U T H                    1984LEa (13280) 334
                                       K(NpO2+H2PO4)=2.3
                                       K(NpO2+HPO4)=8.2
At 150 C: K(NpO2+H2PO4)=1, K(NpO2+HPO4)=9. Evaluated data
--------------------------------------------------------------------------------
NpO2++     oth none     ?   0.0  U                        1969MOc (13281) 335
                                       K(NpO2+H2L)=2.33
                                       K(NpO2+HL)=8.18
Methods: solubility, ion exchange, distribution, EMF.
I=0.5, by distribution: K(NpO2+HL)=7.18, K(NpO2+H2L)=1.70
********************************************************************************
```

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2++	EMF	none	25°C	0.0	U	T H	K1=3.3		1984LEa (16423)	336
100 C: K1=4.6; 150 C: K1=5.8. Evaluated data										
NpO2++	dis	NaClO4	25°C	2.00M	U		K1=1.07	B2=0.6	1976PRa (16424)	337
NpO2++	EMF	oth/un	20°C	var	U		K1=0.7	B2=1.8	1974MCa (16425)	338
Metal: NpO3+ (Np(VII))										
NpO2++	EMF	none	25°C	0.0	U	I			1970AWa (16426)	339
							*K1=1.28			
NpO2++	sp	NaClO4	6°C	ca.1	U		K1=2.20	B2=4.04	1970MKf (16427)	340
Metal: NpO2+++ (Np(VII))										
NpO2++	dis	NaClO4	21°C	1.0M	U				1968ABd (16428)	341
							*K1=0.79			
							*B2=0.56			
NpO2++	sp	NaClO4	25°C	2.0M	U		K1=1.64		1962STb (16429)	342
NpO2++	EMF	NaClO4	25°C	1.0M	U		K1=1.11		1958SPa (16430)	343

SiW11O39-------- H8L (2464)
alpha-Heterosilicon-polytungstate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
NpO2++	sp	NaClO4	RT	0.10M	C				2000PMb (17240)	344
							K(NpO2+SiW11O39)=11.6			
Medium: 0.1 M HClO4.										

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
NpO2++	sol	oth/un	25°C	0.50M	U		K1=3.38	B2=5.65	1979MPb (19002)	345
Medium: ammonium oxalate										
NpO2++	sol	oth/un	20°C	1.00M	U		K1=3.38	B2=5.65	1979MPc (19003)	346
NpO2++	sp	NaClO4	20°C	1.00M	U		K1=6.0	B2=10.10	1969MKh (19004)	347

C2H3O2Cl HL Chloroacetic CAS 79-11-8 (34)
Chloroethanoic acid; ClCH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2++ gl NaClO4 20°C 1.00M U K1=1.33 B2=2.10 B3=2.78 1969CMa (19373) 348
****
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
---
NpO2++ oth none ? 0.00 U K1=2.98 B2=5.51 B3=7.41 1969MOc (20088) 349
Data from survey of literature data
****
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
---
NpO2++ gl NaClO4 20°C 1.00M C T K1=2.37 B2=3.95 B3=5.00 1974MTa (20601) 350

NpO2++ EMF NaClO4 20°C 1.00M U K1=2.37 B2=3.95 B3=5.00 1972PTc (20602) 351
****
C3H5O2Cl HL CAS 107-94-8 (1436)
3-Chloropropanoic acid; Cl.CH2.CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
NpO2++ gl NaClO4 20°C 1.00M U K1=1.88 B2=3.30 B3=3.60 1969CMa (24731) 352
****
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
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NpO2++ gl NaClO4 20°C 1.00M U K1=2.44 B2=4.45 B3=6.49 1969CMa (25027) 353
****
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
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NpO2++ gl NaClO4 20°C 1.00M U K1=5.16 1973CBc (30908) 354
****
C4H8O3 HL CAS 594-61-6 (81)

2-Hydroxy-2-methylpropanoic acid; (CH3)2C(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
NpO2++	gl	NaClO4	20°C	1.00M	C		T K1=3.15 B2=5.25	1974MTa (33500)	355

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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