

SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 18 experiments for
(no ligands specified)

Metal : Tc

(no references specified)

(no experimental details specified)

e- HL Electron (442)
Electron;

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

Tc EMF oth/un 25°C 1.00M U 1973SAd (953) 1
K(Tc(SCN)6- + e)=8.96(0.53V)

Tc EMF none 24°C 0.0 U 1955CSc (954) 2
K=37.6(738 mV)
K'=18.4(272 mV)
K: TcO4(VII)+4H+3e=TcO2(s)+2H2O. K': TcO2(s)+4H+4e=Tc(s)+2H2O

Tc oth none 25°C 0.0 U 1953CSa (955) 3
K=-15.8(-311 mV)
K'=55.9(472 mV)
K''=27(800 mV)
K:TcO4(VII)+2H2O+3e=TcO2(s)+4OH. K': TcO4(VII)+8H+7e=Tc(s)+4H2O
K'': TcO3(s)+2H+2e=TcO2(s)+H2O

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

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

Tc nmr NaClO4 22°C 4.0M C K1=0.10 B2=-0.58 2003GMa (2325) 4
K3=-1.15
Method: NMR. M=[Tc(CO)3]+

Tc ISE NaClO4 15°C 3.0M U 1965SCf (2326) 5
K6=3.58

Metal:Tc++++. Medium:HClO4

CN- HL Cyanide CAS 74-90-8 (230)
Cyanide;

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

Tc kin KNO3 25°C 1.00M U M 1992RLa (2763) 6
K(TcO2L4+H=TcO2HL4)=5
K(TcO2HL4+H=TcO(H2O)L4)=2.9

$K(\text{TcO}(\text{H}_2\text{O})\text{L}_4+\text{A}=\text{TcOL}_4\text{A}+\text{H}_2\text{O})=1.7$

Tc sp oth/un ? var U 1962SHc (2764) 7

$K(\text{Tc}(\text{IV})(\text{OH})_3\text{L}_3+\text{L})=8.1$

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

Chloride;

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

Tc nmr NaClO4 22°C 4.0M C K1=0.12 B2=-0.65 2003GMa (5771) 8
K3=-1.30

Method: NMR: M=[Tc(CO)3]+

Tc ISE NaClO4 15°C 3.0M U 1965SCf (5772) 9
K6=4.66

Metal:Tc++++. Medium:HClO4

I- HL Iodide CAS 10034-85-2 (20)

Iodide;

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

Tc nmr NaClO4 22°C 4.0M C K1=0.43 B2= 0.53 2003GMa (8384) 10
K3=-0.18

Method: NMR. M=[Tc(CO)3]+

OH- HL Hydroxide (57)

Hydroxide;

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

Tc gl KCl 25°C 1.2M C 1998ARa (12224) 11
*K(TcO(H2O)(CN)4)=-2.90
*K(TcO(OH)(CN)4)=-4-5

Medium: KCl/KNO3. Metal is Tc(V).

Tc dis NaClO4 ? U 1973GGb (12225) 12
K(TcOOH=TcO2+H)= ca.1

Tc: Tc++++

Tc oth KNO3 18°C 0.10M U 1969GKa (12226) 13
*K(TcO+H2O=TcOOH+H)=-1.37
*K(TcO+2H2O=TcO(OH)2+2H)=-3.8

Tc: Tc++++. Method: electrical migration or transference number

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

Thiocyanate;

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

Tc nmr NaClO4 22°C 4.0M C K1=2.84 B2= 4.87 2003GMa (15268) 14
K3=1.11

Method: NMR. M=[Tc(CO)3]+

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

Tc ix NaClO4 ? 0.10M U 1970GKb (47045) 15
K(TcO(OH)+L)=13.8

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

Tc ix NaClO4 ? 0.10M U 1970GKb (74210) 16
K(TcO(OH)+L)=19.1

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

Tc ix NaClO4 ? 0.10M U 1970GKb (88790) 17
K(TcO(OH)+L)=20.7

Metal: Tc(IV).

Tc oth oth/un ? .035M U 1970GKb (88791) 18
K(TcO(OH)+L)=20.4

Metal: Tc(IV). Method: electrical migration or transference number.

REFERENCES

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- 1955CSc G Cartledge,W Smith; J.Phys.Chem.,59,1111 (1955)
- 1953CSa J Cobble,W Smith; J.Am.Chem.Soc.,75,5777 (1953)

EXPLANATORY NOTES

DATA Flags are :-

M Data for TERNARY Complexes

END