SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 348 experiments for
 (no ligands specified)
 5 metals : Mo(0), Mo(III), Mo(IV), Mo(V), Mo(VI)
 (no references specified)
 (no experimental details specified)

****
C3H9O3P L CAS 121-45-9 (1786)
Trimethylphosphite; (CH3O)3.P

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(0) cal non-aq 25°C 100% U HM 1991ZGa (28002) 1
Medium: THF. DH(Mo(CO)3A2+L)=-100.4 kJ mol-1, A=P(C6H11)3
****
C18H33P L CAS 2622-14-2 (169)
Tri-(cyclohexyl)phosphine; (C6H11)3P

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(0) cal non-aq 25°C 100% U HM 1991ZGa (98314) 2
  K(Mo(CO)3py2+L)=-4.73
Medium: THF. DH=-70.7 kJ mol-1
****
e- HL Electron (442)
Electron;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) EMF oth/un 25°C 4.0M U I 1963MAb (680) 3
  K=14.64, 866 mV
K: Mo(Cn)6--- + e = Mo(CN)6---- . K=13.79(I=0.5 M; 816 mV). Medium: H2SO4
****
CO L Carbon monoxide CAS 630-08-0 (551)
Carbon monoxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) EMF non-aq 22°C 100% U 1992PMa (2815) 4
  K([MoL3A]2=2MoL3A)=-16.15
Metal:Mo+. Medium: MeCN, 0.1 M Bu4NPF6. A=C5H5. Dimer-monomer equilibrium
****
Cl- HL Chloride CAS 7647-01-0 (50)
Chloride;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) EMF oth/un 25°C 3.00M U 1975ZSa (5236) 5

K(Mo(OH)+4Cl=Mo(OH)Cl4)=2.60
Medium: ethanoic acid

Mo(III) kin oth/un 25°C 1.0M U K1=1.03 1974SSd (5237) 6
Medium: lithium p-toluenesulfonate
****
FClBrI HL (541)
Halides, comparative (for book data under ligand 80)

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) kin alc/w 22°C 100% U M 1960SHa (7409) 7
Metal:Mo++. Medium: EtOH. K(Mo6Cl8Cl6+6Br=Mo6Cl8Br6+6Cl)=-0.1
****
OH- HL Hydroxide (57)
Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) dis NaCl 20°C 1.00M U K1=12.0 B2=23.4 1978MMb (11754) 8
B3=34.7
****
S-- H2L Sulfide CAS 7783-06-4 (705)
Sulfide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) oth none 25°C 0 U 1988LIa (14420) 9
Kso(Mo2S3)=-107.8
*Kso(Mo2S3)=-55.8
Derived from thermodynamic data and K(H+S=HS)=17.3.
****
SCN- HL Thiocyanate CAS 463-56-9 (106)
Thiocyanate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) kin oth/un 25°C 2.00M U 1997NCa (15153) 10
K(Mo4S4(H2O)12+L)=3.11
K(Mo7S8(H2O)18+L)=2.94
Medium: Li-p-toluenesulfonate.

Mo(III) kin oth/un 25°C 2.00M U 1993HLa (15154) 11
K(Mo4S4+L)=3.11
Medium: Li toluene-p-sulfonic acid. For Mo(IV), K=3.72; for mixed Mo(III)/
Mo(IV) (Mo4S4+++++), K=3.48.

Mo(III) kin oth/un 25°C 1.0M U K1=5.0 1974SSd (15155) 12
medium:lithium p-toluenesulfonate

Mo(III) sp oth/un ? 1.0M U K1=0.6 1972KTa (15156) 13
Medium: p-toluenesulfonic acid
****
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
---
Mo(III) kin oth/un ? ? U K1=3.38 1956YAc (18966) 14
****
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
---
Mo(III) vlt oth/un 25°C 0.20M U 1962ZRa (31304) 15
  K(?)=3.17
Medium: 0.2 Na2SO4, 0.1 H2SO4, 0.04 KNO3
****
C5H9N L t-Butylnitrile CAS 7188-38-7 (913)
t-Butylcyanide;(CH3)3C.CN

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) con non-aq 40°C 100% U M 1992LIa (38452) 16
  K(MoL7+Cl)=3.4
  K(MoL7+Br)=3.18
  K(MoL7+I)=2.6
  K(MoL6Cl+Cl)=3.5
Medium: MeCN, 0.0063 M Bu4NClO4. K(MoL6Br+Br)=3.18, K(MoL6I+I)=3. Mo++
****
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
---
Mo(III) vlt oth/un 25°C 0.20M U 1962ZRa (46178) 17
  K(?)=3.47
Medium: 0.2 Na2SO4,0.1 H2SO4,0.04 KNO3
****
C8H19P L (6822)
Di(t-Butyl)phosphine; ((CH3)3C)2PH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(III) nmr none ? 0.0 U T HM 1992BCc (63201) 18
Method:NMR. Medium:toluene. DH(1,2-Mo2L2(NMe2)4 (anti-gauche isomerization))
=-1.3 kJ mol-1, DS=-6.3 J K-1 mol-1. Data also for other phosphides
****
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
Mo(III)	dis	NaCl	20°C	1.0M	U		K1=5.71 B2=11.68 B3=18.64	1978MMi (70752)	19

****

C12H24O6 L 18-Crown-6 CAS 17455-13-9 (577)
1,4,7,10,13,16-Hexaoxacyclooctadecane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(III)	cal	alc/w	25°C	100%	U	H	K1=2.44	1977ILb (83472)	20

Medium: Methanol. DH=20.0 kJ mol-1.

****

C17H14N2O2 L CAS 4551-69-3 (698)
4-Benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(III)	dis	NaCl	20°C	1.0M	U		K1=6.55 B2=12.99 B3=20.15	1978MMi (95893)	21

****

C18H15P L CAS 603-35-0 (621)
Triphenylphosphine; (C6H5)3P

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(III)	kin	non-aq	35°C	100%	U	M	Kout(Mo(CO)5(NHC5H10)+L)=2.78	1975EDa (97143)	22

Medium: hexane

****

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	EMF	oth/un	?	4.50M	U		K(Mo+e=Mo(III))=1.7(100 mV)	1958CHb (681)	23

Medium: H2SO4

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	nmr	KNO3	25°C	0.10M	C		*K(MoO(CN)4(H2O)=-9.88	1994RLa (2741)	24

Method: N.M.R.

```
Mo(IV)     con oth/un 25°C  dil  U    M                  1974FIb  (2742)  25
                                       K(K+Mo(CN)8)=1.8
                                       K(Me4N+Mo(CN)8)=2.5
                                       K(Et4N+Mo(CN)8)=2.3
-------------------------------------------------------------------------------
Mo(IV)     gl  none   25°C  0.0  U T H                  1973BKa  (2743)  26
                                       K(MoOOH(CN)4+H)=8.81
K=8.86(30 C). K=8.90(35 C). K=8.97(40 C). K=9.04(45 C). K=9.13(50 C).
DH=23.4 kJ mol-1
-------------------------------------------------------------------------------
Mo(IV)     sp  NaClO4 25°C  var  U                      1973MHa  (2744)  27
                                       K(Fe+Mo(CN)8)=2.6
-------------------------------------------------------------------------------
Mo(IV)     sp  NaClO4 25°C  var  U    M                 1971JSb  (2745)  28
                                       K(Fe+Mo(CN)8)=2.6
-------------------------------------------------------------------------------
Mo(IV)     sp  oth/un 25°C  var  U    M                 1969KBc  (2746)  29
                                       K(UO2+Mo(CN)4(OH)3(H2O))=3.71
-------------------------------------------------------------------------------
Mo(IV)     sp  oth/un 25°C  var  U    M                 1968DBb  (2747)  30
                                       K(VO+MoL4(OH)3H2O)=4.86
-------------------------------------------------------------------------------
Mo(IV)     gl  oth/un 25°C  0.0  U                      1968PNb  (2748)  31
                                       K(H+MoO2L4)=12.62
                                       K(H+MoOOHL4)=9.98
-------------------------------------------------------------------------------
Mo(IV)     con oth/un 25?°C  dil  U    M                1958SEa  (2749)  32
                                       Ks(KAg2Y(s))=-13.96
                                       Ks(Ag3Y(s))=-13.83
                                       Ks(Mn3Y2(s))=-12.35
                                       Ks(Fe3Y2(s))=-16.28
Y=MoSOHL4(H2O)2---. Ks(Co3Y2)=-13.92; Ks(Ni3Y2)=-18.23; Ks(Cu3Y2)=-18.46;
Ks(Zn3Y2)=-13.62; Ks(Cd3L2)=-18.32; Ks(Hg3Y2)=-18.73; Ks(Pb3Y2)=-18.52
*******************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Mo(IV)     kin oth/un 25°C 2.00M U                      1993HLa  (5238)  33
                                       K(Mo4S4+L)=0.30
Medium: Li toluene-p-sulfonic acid.  For mixed Mo(III)/Mo(IV) (Mo4S4+++++)
*******************************************************************************
ClO4-                  HL    Perchlorate      CAS 7001-90-3  (287)
Perchlorate;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Mo(IV)     kin oth/un   ?  2.50M U        K1=0.91        1952HSc  (6326)  34
Medium: H2SO4
```

```
**************************************************************************
NO3-                    HL    Nitrate          CAS 7697-37-2  (288)
Nitrate;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(IV)     sp  NaClO4 20°C  2.0M U  I     K1=0.14   B2=-0.17  1967VDa  (9773)  35
Metal:MoO2++.  Medium: HClO4. K1=0.10(I=1), 0.14(0.5); B2=-0.26(I=1),
-0.08(I=0.5), corrected for assumed mononuclear hydrolysis
--------------------------------------------------------------------------
Mo(IV)     ix  NaClO4 20°C  1.0M U        K1=0.15   B2=-0.15  1967VDa  (9774)  36
Metal:MoO2++.  Medium: HClO4
--------------------------------------------------------------------------
Mo(IV)     dis oth/un 20°C  var  U                      1967VDb  (9775)  37
                                        Kd(MoO2+2L+2TBP(org))=-0.95
Metal:MoO2++.  Medium: HL var. Org=kerosene
**************************************************************************
OH-                     HL    Hydroxide          (57)
Hydroxide;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(IV)     gl  KCl    25°C  1.2M C                      1998ARa (11755)  38
                                        *K(MoO(H2O)(CN)4)=-9.88
                                        *K(MoO(OH)(CN)4)=<-14
Medium: KCl/KNO3
--------------------------------------------------------------------------
Mo(IV)     kin NaClO4 25°C 2.00M U                      1993LMb (11756)  39
                                        *K(Mo3Se4(H2O)9)=-0.49
                                        *K(Mo3O3Se(H2O)9)=-0.36
Medium: LiClO4.
--------------------------------------------------------------------------
Mo(IV)     sp  NaClO4 25°C 2.00M U                      1992RSb (11757)  40
                                        *K(Mo3S4(H2O)9)=-0.74
Medium: 2.0 M LiClO4.
--------------------------------------------------------------------------
Mo(IV)     EMF oth/un 16°C  var  U                      1959LMa (11758)  41
                                        K(Mo(CN)4OH+OH)=8.10
                                        K(Mo(CN)4(OH)2+OH)=5.47
                                        K(Mo(CN)4(OH)3+OH)=1.55
**************************************************************************
O2                       L    Oxygen           CAS 7782-44-7  (83)
Dioxygen, also oxide; O--, and superoxide, O2-
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(IV)     kin oth/un 25°C  2.0M U        K1=2.56        1986HNa (12630)  42
                                        K(MoO2+Mo=Mo2O2)=2.73
Medium: Li-p-toluenesulphonate
**************************************************************************
```

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	sp	oth/un	RT	0.04M	M			1989CHb (12671)	43

Medium: 0.04 M phosphate buffer. K(MoO4+H2O2=MoO2(O2)OH+OH)=-6.04
K(MoO2(O2)OH+H2O2=MoO(O2)2OH+H2O)=5.43. Also tris and tetra peroxo cpds.

****

PO4--- H3L Phosphate CAS 7664-38-2 (176)
Phosphate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	vlt	NaClO4	25°C	1.00M	U			1962ZRa (13249)	44
							K(Mo(IV)+H3L)=1.16		

****

ReO4- HL Perrhenate (2581)
Rhenate(VII), Perrhenate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	dis	none	20°C	0.0	U			1977PRa (14105)	45
							K(MoO2+L)=1.43		

****

S-- H2L Sulfide CAS 7783-06-4 (705)
Sulfide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	oth	none	25°C	0	U			1988LIa (14421)	46
							Kso(MoS2)=-75.6		
							*Kso(MoS2)=-40.9		

Derived from thermodynamic data and K(H+S=HS)=17.3.

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	kin	NaClO4	25°C	2.00M	U			1993LMb (15157)	47
							K(Mo3Se4+NCS)=3.38		
							K(Mo3OSe3+NCS)=3.23		
							K(Mo3O2Se2+NCS)=3.66		
							K(Mo3O3Se+NCS)=3.18		

K(Mo3O4+NCS)=2.99. Medium: 2.0 M HClO4.

Mo(IV)	kin	NaClO4	25°C	2.00M	U			1993VSa (15158)	48
							K(Mo3S4(H2O)9+L)=3.36		
							K(Mo2WS4(H2O)9+L)=3.48		

K(MoW2S4(H2O)9+L)=3.68
Medium: 2.0 M HClO4. For mixed Mo/W species data refer to L binding to Mo.
Metals are Mo(IV) and W(IV).

Mo(IV) kin oth/un 25°C 2.0M U T K1=2.54 1976OSa (15159) 49
Medium: LiClO4/HClO4, metal: MoO++. K1=2.89 (10 C); 2.73 (15 C); 2.61 (20 C)
****
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
---
Mo(IV) kin oth/un 25°C 1.00M U 1984KRa (18967) 50
K(Mo+HL=MoL+H)=3.07
****
C2H4 L Ethylene CAS 74-85-1 (478)
Ethene; H2C:CH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) nmr non-aq 24°C 100% U M 1992HMa (19427) 51
K(MoOA3Cl2+L=MoOLB2Cl2+B)=-1.0
Method:NMR. Medium:C6D6. A:PMePh2. When A=PMe3, K=-3.00
****
C2H4O2S H2L Thioglycolic CAS 68-11-1 (596)
Mercaptoethanoic acid; HS.CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) sp oth/un 25°C ? U 1976LAg (20347) 52
K(MoO(OH)+H2L=MoO2H2L+H)=0.20
K(MoO(OH)+HL=MoO2H2L)=3.80
****
C2H6OS L DMSO CAS 67-68-5 (329)
Dimethylsulfoxide; (CH3)2.SO

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) kin non-aq 20°C 100% U I 1993BBc (22112) 53
K(MoOA+L)=1.22
Medium: CH2Cl2. In DMF: K=1.90. A: S-methyl-3-(2-hydroxyphenyl)methylene-
dithiocarbazate.
****
C3H6O2S H2L Thiolactic acid CAS 79-42-5 (366)
2-Mercaptopropanoic acid; CH3.CH(SH).COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) sp oth/un 25°C ? U 1976LAg (25159) 54
K(MoO(OH)+H2L=MoO2H2L+H)=0.08

****
C3H7NO2S H2L Cysteine CAS 52-90-4 (96)
2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) sp oth/un RT 0.5M U 1977LAb (26807) 55
K(MO(OH)+HL=M(OH)2L+H)=2.04
Medium: Na-toluenesulfonic acid
****
C4H6O4S H3L Thiomalic acid CAS 70-49-5 (109)
2-Mercaptosuccinic acid, 2-Sulfanyl-1,4-butanedioic acid; HOOC.CH(SH).CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) sp oth/un 25°C ? U 1976LAg (30347) 56
K(MoO(OH)+H2L=MoO2H2L+H)=0.04
****
C4H6O4S2 H4L CAS 2418-14-6 (4264)
2,3-Dimercaptobutanedioic acid; HOOC.CH(SH).CH(SH).COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) gl KNO3 25°C 0.10M C 1991HKb (30394) 57
K(Mo3S7L3+H)=11.7
K(Mo3S7HL3+H)=7.64
K(Mo3S7H2L3+H)=6.77
K(Mo3S7H3L3+H)=4.89
K(Mo3S7H4L3+H)=3.98, K(Mo3S7H5L3+H)=3.3
****
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
---
Mo(IV) vlt NaClO4 25°C 1.0M U 1962ZRa (31305) 58
K(?)=2.06
****
C5H6 HL Cyclopentadiene CAS 542-92-7 (4288)
Cyclopentadiene; cyclo(-CH:CH.CH2.CH:CH-)

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(IV) nmr none 37°C 0.0 U 1991KKc (37080) 59
*K(MoL2)=-5.5
*K(MoH-1L2)=-8.5
****
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
Mo(IV)	nmr	oth/un	35°C	?	U		1966KUa (39266)		60
							K(MoO4+HL+H)=8.5		
							K(MoO3+L)=10.4		
							K(Mo7O24+7HL=7MoO3L+H)=8.9		
							K(MoO3L+H)=2.8		
							K(2MoO3L+2H)=7		

****

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
Mo(IV)	vlt	NaClO4	25°C	1.0M	U		1962ZRa (46179)		61
							K(?)=2.42		

Medium: HClO4

****

C6H9N3O2 HL Histidine CAS 71-00-1 (1)
2-Amino-3-(4'-imidazolyl)propanoic acid; H2N.CH(CH2.C3H3N2)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	gl	KNO3	25°C	0.15M	C		1981JJa (47588)		62
							B(MoO4+2H+A=MoO3A+H2O)=16.76		

****

C7H14N4S L (6856)
2,8-Dimethylnona-2,7-diene-3,4,6,7-tetraza-5-thione; CH3.C(CH3):N.NH.CS.NH.N:C(CH3)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	sp	alc/w	25°C	70%	U		K1=3.49 B2=6.72	1991LGa (57845)	63

Complexes probably MoO2L and MoO2L2

****

C9H18N4S L (6855)
3,9-Dimethylundeca-3,8-diene-4,5,7,8-tetraza-6-thione;
CH3CH2C(CH3):N.NH.CS.NH.N:C(CH3)CH2CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	sp	alc/w	25°C	70%	U		K1=4.14 B2=8.02	1991LGa (67960)	64

Complexes probably MoO2L and MoO2L2

****

C15H10O8 H6L Myricetin CAS 529-44-2 (4055)
3,3',4',5,5',7-Hexahydroxyflavone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(IV)	sp	oth/un	20°C	?	U		1965GKa (91026)		65
							K(MoO4+H6L=MoO3H4L)=4.62(?)		

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

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(V) EMF none 30°C 0.00 U 1971ESb (682) 66
K=2.96(89mV)
K: MoO2+ + 4H+ + 2e=Mo+++ + 2H2O

Mo(V) EMF oth/un 18°C 2.0M U 1952LAb (683) 67
K=-8.7(green Mo(III),-250 mV)
K=3.8(red Mo(III),110 mV)
Medium:HCl. K: Mo(V)+2e=Mo(III)

Mo(V) EMF oth/un 20°C 8.75M U I 1941HGa (684) 68
K(Mo+2e=Mo(III))=7.9(230 mV)
Medium:H2SO4. At I=4.7 M: K=3.3(95 mV), 2.25 M:1.0(30 mV); I=0.45:-0.3(10mV)

Mo(V) EMF oth/un 25°C 0.25M U I 1936KTa (685) 69
K(Mo(CN)8+e)=13.46(796 mV)
Medium: KCl, KBr, KNO3. At I=0: K=12.28(726.0 mV)

Mo(V) EMF oth/un 0°C var U 1924COa (686) 70
K(Mo(CN)8+e)=15.5(839 mV)
****
Br- HL Bromide CAS 10035-10-6 (19)
Bromide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(V) oth oth/un 20°C var U T H 1972JRa (2134) 71
K=13.4
K: Mo4(OH)4O4L12+4H2O=Mo4(OH)4O8L4+8H+8L)=13.7(1 C), 13.1(40 C).
DH(K)=-24.3 kJ mol-1, DS=173 J K-1 mol-1. Method: magnetic susceptibility
****
Cl- HL Chloride CAS 7647-01-0 (50)
Chloride;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(V) sp NaClO4 25°C 5.0M C 1984HSa (5239) 72
K(Mo2O4Cl4+2H+4Cl=Mo2O3Cl8+H2O)=0.30
K(Mo2O3Cl8+6H+2Cl=2H2MoOCl5)=-7.82

Mo(V) oth KCl 20°C var U T H 1972JRa (5240) 73
K=4.01
Medium: HCl. K: 2MoOCl5+4H2O=(MoOCl2(H2O))2+4H+6Cl. K=3.82(30 C), 3.65(40 C)
DH=-31.4 kJ mol-1, DS=39.7 J K-1 mol-1. Method: magnetic susceptibility
---

```
Mo(V)      sp  KCl    26°C  4.0M U TIH                    1971YTa  (5241)  74
                                        K=3.07
Medium: HCl.K: 2MoOCl5+H2O=(MoOCl4)2O+2H+2Cl). DH(K)=-59.8 kJ mol-1.  K=3.35
(59 C),2.24(78 C),1.86(93 C). I=6 M: DH(K)=-37.6. K=2.50(24 C), 1.27(92 C)
--------------------------------------------------------------------------------
Mo(V)      oth KCl    40°C  var  U T                     1967JRa  (5242)  75
                                        K(2MoOCl5+4H2O=X+4H+6Cl)=7.31
Method:magnetic susceptibility.  Medium:HCl var. K=8.03(20 C), 7.64(30 C)
X=Mo2O2(OH)4Cl4
--------------------------------------------------------------------------------
Mo(V)      sp  KCl      ?   var  U                       1959BGi  (5243)  76
                                        K(MoO+3Cl)=-2.3
                                        K(MoO2+2H+3Cl=MoOCl3+H2O)=-3.2
********************************************************************************
FClBrI                 HL                        (541)
Halides, comparative (for book data under ligand 80)
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(V)      nmr oth/un 20°C  8.0M U                       1966MDb  (7410)  77
K: MoOCl5+nL=MoOCl5-nLn+nCl. L=Br:K=-0.5(n=1), -0.7(n=2), -1.7(n=3),
-3.2(n=4) or =-4.3(n=5)
********************************************************************************
OH-                    HL    Hydroxide          (57)
Hydroxide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(V)      gl  NaCl   30°C 0.50M C                       1991HYa (11759)  78
                                        K(2MoO+3OH)=-0.89
                                        K(3MoO+4OH)=1.00
                                        K(4MoO+5OH)=2.98
--------------------------------------------------------------------------------
Mo(V)      sp  oth/un 18°C 0.10M U                       1984NGa (11760)  79
                                        K(MoO2+OH=MoO2OH)=10.60
In 0.1 M HClO4/NaClO4; For 1.0 M HClO4/NaClO4 K=10.98
--------------------------------------------------------------------------------
Mo(V)      sol oth/un 450°C 0.00  U                      1980KKc (11761)  80
                                        K(4MoO2+2H2O+O2=4MoO2(OH))=2.2
                                        p(O2)=500 atm
--------------------------------------------------------------------------------
Mo(V)      sp  KCl      ?   var  U                       1959BGi (11762)  81
                                        K(MoO2+2H=MoO+H2O)=ca.-1
********************************************************************************
SCN-                   HL    Thiocyanate      CAS 463-56-9  (106)
Thiocyanate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(V)      sp  mixed  20°C    ?  C                       1986CZa (15160)  82
```

```
                                        B(CuH-2L)=-7.88
                                        B(CuH-3L)=-15.12
Medium: DMSO/acetone
--------------------------------------------------------------------------------
Mo(V)      kin NaClO4 25°C 1.00M U    M                  1976CSa (15161)  83
                                        K(Mo2O4(C2O4)2+L)=0.74
By spectrophotometry: K=0.63
--------------------------------------------------------------------------------
Mo(V)      kin NaClO4 25°C 2.00M U     T                 1975STa (15162)  84
                                        K(Mo2O4+L=Mo2O4L)=2.38
Medium: LiClO4
--------------------------------------------------------------------------------
Mo(V)      sp  non-aq   ?  100%  U        K1=2.88        1970BRb (15163)  85
Medium: (EtO)2PSSEt + EtOH(4:1)
--------------------------------------------------------------------------------
Mo(V)      nmr NaClO4 23°C  2.0M U    M                  1968MDf (15164)  86
                                        K(MoOL4+A=MoOL3A+L)=-1.64
                                        K(MoOL4+2A=MoOL2A2+2L)=-3.24
                                        K(MoOL4+3A=MoOLA3+3L)=-6.19
Medium: HClO4. A=(NH2)2CS
--------------------------------------------------------------------------------
Mo(V)      sp  non-aq   ?  100%  U  I     K1=5.0    B2=9.40   1965ULa (15165)  87
                                        K3=4.0
                                        K4=3.4
Medium: Me2CO, Mo as MoCl5. In MeOH: K1=3.85
--------------------------------------------------------------------------------
Mo(V)      sp  oth/un   ?  3.25M U  I                  1959NAb (15166)  88
                                        K6?=1.35
Medium: H2SO4. In 3.1 M (NH4)2SO4 K3*K4*K5?=2.25
--------------------------------------------------------------------------------
Mo(V)      sp  mixed    ?   60%  U        K1=3.2    B2=6.2    1958PEb (15167)  89
                                        K3=ca.2
                                        K4=-1.6
Medium: 60% w/w acetone/H2O
--------------------------------------------------------------------------------
Mo(V)      sp  mixed  20°C  60%  U        K1=3.2    B2=6.2    1958PEb (15168)  90
                                        K3=1.85
Meedium: 60% w/w acetone/H2O, 1 M HCl. Also by electrical migration
********************************************************************************
SO4--                 H2L    Sulfate          CAS 7664-93-9  (15)
Sulfate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(V)      sp  oth/un   ?   var  U                        1974RWa (16355)  91
K(2MoO(HL)5+4H2O=MoO2(OH)2(H2O)2(HL)6+4HL+2H)=-9.0
********************************************************************************
CH4O                    L    Methyl alcohol   CAS 67-56-1  (597)
Methanol; CH3.OH
--------------------------------------------------------------------------------
```

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	EMF	alc/w	20°C	100%	U		1971GSa (17886)		92
							K(Mo+2L=Mo(L')2+2H) > 1		
							K(Mo(L')2+2L'=Mo(L')4)=24.35		

Medium: MeOH, 1 M Me4NCl. L'=H-1L

****

C3H7NO2S H2L Cysteine CAS 52-90-4 (96)
2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	gl	NaClO4	25°C	0.50M	C		1998MSa (26808)		93
							K(Mo2O2S2+2L)=36.24		
							K(Mo2O2S2+H+2L)=38.63		
							K(Mo2O2S2+2H+2L)=40.63		
							*K(Mo2O2S2H2L2)=-2.00		

*K(Mo2O2S2HL2)=-2.39

****

C5H5N L Pyridine CAS 110-86-1 (31)
Pyridine, Azine;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	sp	NaClO4	25°C	1.00M	U	M		1976CSa (36659)	94
							K(Mo2O4(C2O4)2+L)=1.60		

By kinetics: K=1.83

****

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
Mo(V)	dis	oth/un	?	?	U			1968ABb (38030)	95
							K(MoO(OH)+2L)=20.36		

****

C6H2O4Br2 H2L Bromanilic acid CAS 4379-59-6 (1279)
3,6-Dibromo-2,5-dihydroxy-1,4-benzoquinone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	sp	NaClO4	25°C	2.00M	U			1986VPa (42037)	96
							K(MoO2+H2L=MoO2L+2H)=3.58		

****

C10H8O8S2 H4L Chromotropic ac CAS 148-25-4 (1875)
1,8-Dihydroxynaphthalene-3,6-disulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	sp	oth/un	?	0.10M	U			1968TKd (69960)	97

K(MoO+2H2L)=8.46

Metal: MoO+++

****

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
Mo(V)	EMF	NaClO4	?	0.10M	U		1970HPa (73970)		98
							K(Mo2O4+H2L)=11.24		
							K(Mo2O4+L) > 27.4		
Mo(V)	sp	none	?	0.0	U		K1=6.36	1958SAa (73971)	99

****

C13H11NO2 HL CAS 304-88-1 (181)
N-Phenylbenzohydroxamic acid; C6H5.CO.N(C6H5).OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	dis	NaClO4	20°C	?	U		K1=14.0 B2=28.12	1967DBa (85166)	100
							K(MoO(OH)+L)=11.83		
							K(MoO(OH)+2L)=23.31		

****

C13H15NO7 H3L CAS 98531-21-6 (8057)
2-Hydroxybenzylamine-N,N,O-triethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(V)	gl	NaCl	30°C	0.50M	C		1991HYa (85760)		101
							K(MoO+H+L)=14.85		
							K(MoO+2H+2L)=28.51		

****

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	oth	none	25°C	0.00	U		1974OHa (687)		102
							K=-92.30(-0.910V)		

K: MoO4-- + 4H2O + 6e=Mo(s) + 8OH-; method:combination of thermodynamic data

---

Mo(VI)	sp	oth/un	25°C	8.6M	U		1964ANb (688)		103
							K=0.4		

Medium 8.6M HBr. K:Mo(V1)=(MoOBr4-)2 + Br3-

Mo(VI)	oth	none	25°C	0.00	U		1956GHa (689)		104
							K=-93.3(-0.92V)		

K: MoO4-- + 4H2O + 6e=Mo(s) + 8OH-; method:combination of thermodynamic data

---

Mo(VI)	EMF	oth/un	30°C	0.0	U		1953EEa (690)		105

```
                                        K(MoO2+2H+e)=8.0(482.6 mV)
--------------------------------------------------------------------------------
Mo(VI)     EMF oth/un 18°C  2.0M U                        1952LAb   (691) 106
                                        K(Mo+e=Mo(V))=9.2(530 mV)
--------------------------------------------------------------------------------
Mo(VI)     oth none   25°C  0.0  U                        1952LAb   (692) 107
                                        K=-106.1(-1050 mV)
K: MoO4+4H2O+6e=Mo(s)+8OH from thermodynamic data
--------------------------------------------------------------------------------
Mo(VI)     EMF oth/un 20°C  5.0M U  I                     1941HGa   (693) 108
                                        K(Mo+e=Mo(V))=9.1(530 mV)
Medium:HCl. In H2SO4: 9.25 M: K=9.1(530 mV), 4.85 M: K=81.(470 mV),
2.35 M: K=7.4(430 mV), 0.5 M: K=7.0(405 mV)
********************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(VI)     sp  NaCl   25°C  4.0M C                         1983HHa  (5244) 109
Medium: HCl. K(Mo(OH)5(H2O)+H+2Cl=Mo(OH)4Cl2+2H2O)=-0.54
K(Mo(OH)4Cl2+H+Cl=Mo(OH)3Cl3+H2O)=-1.44
--------------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C  var  U                        1966RCa  (5245) 110
                                        K=-0.89
                                        K'=-1.42
                                        K(Mo2Cl2+Cl)=-2.64
Medium: HCl. K: Mo(OH)5H2O+Cl=MoCl(OH)5+H2O). K': Mo(OH)5Cl+H+L=Mo2Cl2+3H2O
(Mo(OH)5H2O=H3MoO4(H2O)2). HMoO4: K(H)1=4.21, K2=4.00, K3=0.93
--------------------------------------------------------------------------------
Mo(VI)     ix  none   25°C  0.0  U        K1=-0.3   B2=-0.8   1964PCa  (5246) 111
                                        K3=-1.89
--------------------------------------------------------------------------------
Mo(VI)     sp  NaClO4   ?  5.30M U                        1959CSa  (5247) 112
K(HMo2O6+3H+4Cl=2MoO2Cl2+2H2O)=-4.1
********************************************************************************
F-                     HL    Fluoride         CAS 7644-39-3  (201)
Fluoride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Mo(VI)     ix  oth/un   ?     ?  U                        1973PMa  (7028) 113
                                        K(MoO2F2+F)=2.91
                                        K(MoO2F3+F)=3.83
--------------------------------------------------------------------------------
Mo(VI)     sp  oth/un   ?   var  U                        1967KKb  (7029) 114
                                        K(H2MoO4+F=MoO3F+H2O)=4.48
                                        K(H2MoO4+4F=MoO2F4(+2H))=10.58
--------------------------------------------------------------------------------
Mo(VI)     con non-aq -5°C 100%  U                        1960NVa  (7030) 115
```

K(MoO2F2+4HF=MoF6+2H2O)=-3.5
Medium: liquid HF, m units
****
NH2SO3- H2L Sulfamate CAS 5329-14-6 (452)
Sulfamate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 25°C ? U 1958SAc (8800) 116
K(2H+2L+MoO4=MoO3L2+H2O)=-7 ?
****
NH3O L Hydroxylamine; CAS 5470-11-1 (1808)
Hydroxylamine; NH2.OH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl oth/un 20°C dil U 1968JDa (9268) 117
K(HMo11O36L+H)=3.84
****
NO3- HL Nitrate CAS 7697-37-2 (288)
Nitrate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) vlt NaClO4 25°C 0.50M U 1983ZZa (9776) 118
K(MoO2+L)=0.32

Mo(VI) dis non-aq 25°C 100% U I 1970CMb (9777) 119
K(Mo(OH)6+HL)=2.26
Medium: TBP, 0.5 M KNO3. In 1 M KNO3, K=2.22
****
OH- HL Hydroxide (57)
Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp NaClO4 25°C 0.0 U H 2000CHa (11763) 120
K(MoO3+H=MoO2(OH))=0.95
K(MoO2(OH)+H=MoO2)=-1.18
K(2MoO2(OH)=Mo2O5+H2O)=1.99
Medium: 0.4-8.1 M HClO4. DH(K(MoO2(OH)+H)=-21.4 kJ mol-1.
DS=-90 J K-1 mol-1 in 6.3 M HClO4. DH(Mo2O5)=-30.5, DS=-63.

Mo(VI) sp NaClO4 25°C 1.0M C 1988CDc (11764) 121
B(2,1)=7.11
B(11,7)=62.9
B(12,8)=72.0
Method: distribution between HClO4/NaClO4 solution and tri-n-butyl phos-
phate. B(p,q): pH + qMoO4=Hp(MoO4)q

```
Mo(VI)     sp  NaClO4 25°C  4.0M C                      1983HUa (11765) 122
                                        K(Mo(OH)6+H=Mo(OH)5(H2O))=1.35
--------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 0.10M C TIH    K1=3.47   B2=7.21   1976CRa (11766) 123
At I=0 by extrapolation: K1=3.55, B2=7.20
--------------------------------------------------------------------------
Mo(VI)     ix  NaCl   25°C 0.70M U                      1976SKb (11767) 124
                                        K(MoO2+OH)=12.04
                                        B(MoO2+2OH)=23.60
                                        B(MoO2+3OH)=31.78
                                        B(2MoO2+3OH)=36.78
--------------------------------------------------------------------------
Mo(VI)     sp  KNO3   25°C 0.10M U  I     K1=13.81  B2=27.06  1971NSd (11768) 125
                                        K3=12.48
Mo(VI)=MoO2++. K1=14.06, K2=13.52, K3=12.75(I=0.3).   K1=14.17, K2=13.62,
K3=12.79(I=0.5).   K1=14.68, K2=14.15, K3=13.37(I=1)
**************************************************************************
O2--                  H2L    Peroxide         CAS 7772-84-1  (2813)
Peroxide; -O.O-
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     nmr oth/un 25°C 0.30M C T  M                  2002TAa (12672) 126
                                        B(1,1,2,0)=11.61
                                        B(2,1,2,0)=13.77
                                        B(2,1,2,1)=14.50
                                        B(2,2,4,0)=23.77
Method: O17 nmr. Medium: 0.30 M Na2SO4. Also data for 5 C.
B(p,q,r,s): pH+qMoO4+rH2O2+sSO4=Hp(MoO4)q(H2O2)r(SO4)s.
--------------------------------------------------------------------------
Mo(VI)     nmr NaCl    5°C 0.60M C T                   2002TAa (12673) 127
                                        B(1,1,2,0)=11.61
                                        B(2,1,2,0)=13.86
                                        B(2,1,2,1)=13.87
                                        B(2,2,4,0)=24.08
Method: O17 nmr. B(3,2,4,0)=26.23, B(2,2,6,0)=23.9.
B(p,q,r,s): pH+qMoO4+rH2O2+sCl=Hp(MoO4)q(H2O2)r(Cl)s.
--------------------------------------------------------------------------
Mo(VI)     gl  oth/un 25°C 0.30M C    M                  2002THa (12674) 128
                                        B(1,1,1,0)=8.53
                                        B(2,1,1,0)=11.22
                                        B(1,1,2,0)=11.61
                                        B(2,1,2,0)=13.77
Medium: 0.30 M Na2SO4. B(2,1,2,1)=14.50, B(2,2,4,0)=23.77, B(8,7,1,0)=
56.71. B(p,q,r,s): pH+qMoO4+rH2O2+sSO4=Hp(MoO4)q(H2O2)r(SO4)s.
--------------------------------------------------------------------------
Mo(VI)     gl  oth/un 25°C 0.30M C    M                  2002THa (12675) 129
                                        B(9,7,1,0)=62.00
                                        B(10,7,1,0)=65.74
                                        B(11,7,1,0)=68.23
```

Medium: 0.30 M Na2SO4. B(p,q,r,s): pH+qMoO4+rH2O2+sSO4=
Hp(MoO4)q(H2O2)r(SO4)s.

Mo(VI) kin none 25°C 0.0 C 1990CSb (12676) 130
K(MoO4+H2L=MoO2L(OH)+OH)=-6.04
K(MoO2L(OH)+H2L=MoOL2(OH)+H2O)=5.43

Mo(VI) sp NaClO4 25°C 1.00M U T K1=6.90 1987LSa (12677) 131

Mo(VI) kin oth/un 25°C 0.05M U 1969AYa (12678) 132
K(H2MoO4+H2L=H2MoO5+H2O)=4.64
K'(Mo2O7+H2L=H2Mo2O9)=3.4
By spectrophotometry, K'=3.5, K(Mo2O7+2H2L=H2Mo2O1+2H)=3.3

Mo(VI) oth oth/un 25°C var U 1965MOb (12679) 133
K(MoL4+H2L=HMoL4+HL)=-4.7
K(MoL4+H2O=HMoL4+OH)=ca.-9

Mo(VI) gl oth/un ? var U 1958CSb (12680) 134
K(MoO4+2H2L=HMoO2L2+OH+H2O)=-3.6

Mo(VI) gl oth/un ? var U 1958CSb (12681) 135
K(H+HMoO2L2)=2.5
K(H+MoO2L2)=9.15

Mo(VI) sp oth/un ? 10.0M U 1955CSa (12682) 136
Medium: HClO4,H2SO4. K(HMo2O2L2HSO4+2H2L+H2O=H2Mo2O3L4+HSO4+5H)=8.50

****

PO4--- H3L Phosphate CAS 7664-38-2 (176)
Phosphate;

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

---

Mo(VI) gl NaCl 25°C 0.60M C M 2000SAa (13250) 137
B(22,11,1,1)=141.5
B(21,10,2,1)=146.9
B(22,10,2,1)=147.2
B(20,9,3,1)=147.1
B(p,q,r,s): pH+qMoO4+rHVO4+sHPO4. Additional methods: 31P and 51V nmr.
B(21,9,3,1)=150.2, B(22,9,3,1)=151.7, B(23,9,3,1)=152.2.

Mo(VI) sp NaClO4 25°C 3.00M C 1980LPe (13251) 138
K(19H+11MoO4+HPO4)=125.96

Mo(VI) gl NaClO4 25°C 3.00M C 1975PEb (13252) 139
B(8,5,2)=61.97
B(9,5,2)=67.12
B(10,5,2)=70.69
B(14,9,1)=98.41
B(15,9,1)=102.83; B(16,9,1)=105.85; B(17,9,1)=106.85;

B(p,q,r): pH+qMoO4+rHPO4=Hp(MoO4)q(HPO4)r

Mo(VI) sp oth/un 25°C var U M 1969SAb (13253) 140
K((MoO2)12(H3L)H-27)=-14.9

Mo(VI) vlt oth/un 25°C var U 1961YBb (13254) 141
K(H2MoO4+H3L=MoO2HL+2H2O)=3.16
K(MoO2HL+H3L=MoO2(H2L)2)=0.19

Mo(VI) kin oth/un 22°C 0.48M U 1956YAc (13255) 142
K(H2MoO4+H3L=MoO2L+H+2H2O)=1.02; K(H2MoO4+2H3L=MoO2L2+4H+2H2O)=2.64

****

S-- H2L Sulfide CAS 7783-06-4 (705)
Sulfide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	oth/un	25°C	?	U		K(MoO4+HS+H=MoO3S+H2O)=-10.80 K(MoO3S+HS+H=MoO2S2+aq)=-10.41 K(MoO2S2+HS+H=MoOS3+aq)=-10.05 K(MoO3S+HS+H=MoS4+H2O)=-9.49	1988BHa (14422)	143
Mo(VI)	sol	oth/un	60°C	dil	U	T	Kso(Tl2MoO4S)=-11.36 K=-12.42(25 C), -11.87(40 C), -11.69(50 C)	1968SJb (14423)	144

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	oth/un	?	var	U	M	K(MoOL4+A=MoOL3A+L)=-1.5 K(MoOL4+2A=MoOL2A2+2L)=-3.1 K(MoOL4+3A=MoOLA3+3L)-5.1 K(MoOL4+4A=MoOA4+4L)=-7.6 A=Br-. Other ternary complexes also reported. Method: esr	1969MDb (15169)	145

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	NaClO4	25°C	4.0M	C		K(Mo(OH)5+2HL=Mo(OH)4L2)=0.52 K: Mo(OH)5(H2O)+2HSO4=Mo(OH)4(SO4)2+H	1983HUa (16356)	146
Mo(VI)	sp	NaClO4	?	8.0M	U		K(HMo2O6+3H+2HL=2MoO3LH3)=-4.74	1959CSa (16357)	147

```
**************************************************************************
SiO3--                H2L    Silicate         CAS 7699-41-4  (747)
Silicate; SiO2(OH)2--
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     sp  NaClO4 25°C  1.0M U                        1982KCb (17215) 148
                                        Keff=32.2
Measured at pH 1.2 in HNO3. Keff=(12Mo+Si(OH)4).  Keff=31.9 in HClO4;
Keff=31.6 in H2SO4
**************************************************************************
VO4---                H3L                      CAS 15457-75-7  (1586)
Vanadate; VO2(OH)3-- or polymers
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 0.60M C                        1991HPa (17383) 149
                                        B(15,1,9)=134.56
                                        B(16,1,9)=137.33
                                        B(16,2,8)=133.0
                                        B(13,4,5)=105.22
B(p,q,r): pH+q(MoO4--)+r(HVO4--).  B(14,4,5)=107.58, B(8,4,2)=60.37,
B(9,4,2)=64.11, B(9,5,1)=59.14, B(15,9,1)=95.0, B(11,7,1)=74.63.
--------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 0.60M C                        1989HPa (17384) 150
                                        B(15,1,9)=134.56
                                        B(16,1,9)=137.33
                                        B(16,2,8)=132.97
From combined emf/nmr study. Also pK(16,1,9)=2.77.
B(p,q,r): pH+q[MoO4]+r[HVO4]=Hp[MoO4]q[HVO4]r.
**************************************************************************
WO4--                 H2L    Tungstate        CAS 13783-36-3  (445)
Tungstate;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     dis oth/un 25°C       U T H                    1974PRa (17441) 151
                                        K'=5.77
K: MoO4 + HCrO4. 60 C; K'=4.65.  DH=--32 kJ mol-1
**************************************************************************
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
--------------------------------------------------------------------------
Mo(VI)     ix  oth/un   ?  0.05M U        K1=1.02   B2=2.20   1970SHa (17625) 152
                                        B3=2.78
                                        B4=4.93
Medium: 0.01-0.05 HL. Metal ion: MoO2++. pH 2.5
**************************************************************************
```

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	oth/un	-70°C	?	U	M	K(MoO2F2(H2O)2+L)=0.08 K(MoO2F2(H20)L+L)=-0.60	1971BPg (17887)	153

****
CH5AsO3 H2L Me-Arsonic acid CAS 124-58-3 (585)
Methylarsonic acid; CH3.AsO3H2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	NaCl	22°C	1.00M	U		B(11,6,2)=83.4 B(12,6,2)=88.3 B(10,5,2)=75.2	1997KYa (17966)	154

B(p,q,r): pH + qMoO4 + rCH3AsO3 = Hp(MoO4)q(CH3AsO3)r
****
CH5O3P H2L CAS 13590-71-1 (1752)
Methylphosphonic acid; CH3.PO3H2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	NaCl	25°C	1.0M	C		B(10,5,2)=69.51 B(11,5,2)=71.07 B(11,7,1)=72.69 B(12,7,1)=76.23	1998KYa (18130)	155

Additional method: nmr. B(p,q,r): pH+qMoO4+rL=Hp(MoO4)qLr.
B(12,6,1)=70.31.
****
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
Mo(VI)	gl	NaCl	25°C	1.0M	C	H	B(MoH2L)=13.619 B(Mo2H5L2)=31.20 B(Mo2H6L2)=34.08	1986CHa (18968)	156

Mo=MoO4--. DH(MoH2L)=-59.5, DH(Mo2H5L2)=-123.0, DH(Mo2H6L2)=-117.0 kJ mol-1

Mo(VI)	gl	KNO3	25°C	0.15M	C		K(MoO4+2H+L=MoO3L+H2O)=13.816	1984JJa (18969)	157
Mo(VI)	sp	NaClO4	30°C	1.00M	U		K(MoO4+2L+2H)=15.52 K(2MoO2(OH)2L2+2H)=16.5	1981BCb (18970)	158

K(Mo2O5(OH)2L2+H)=14.6

Mo(VI) gl KNO3 21°C 0.22M C 1978MBc (18971) 159
K(MoO4+2H+L=MoO3L+H2O)=13.98
Medium pH 5-7

Mo(VI) oth oth/un ? ? U K1=1.57 1969SHd (18972) 160
Metal ion is MoO2++

Mo(VI) dis NaClO4 20°C 0.10M U 1963STc (18973) 161
K(H2MoO4+2HL)=7.37

Mo(VI) vlt oth/un 25°C 0.11M U I 1961YBa (18974) 162
K(H2MoO4+H2L)=3.91
K=3.80(I=0.179), 3.49(I=0.345)
****
C2H4N2S2 L Rubeanic acid CAS 79-40-3 (2782)
Dithiooxamide; H2N.CS.CS.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp mixed 90°C 80% U K1=23.91 1975WHb (19453) 163
Medium: 80% 2-propanol/H2O
****
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
---
Mo(VI) nmr oth/un -70°C 0.10M U M 1971BPg (20584) 164
K(MoO2F2(H2O)2+L=MoO2F2(H2O)L+H2O)=-0.07,
K(MoO2F2(H2O)L+L=MoO2F2L2+H2O)=-0.70.
****
C2H5NO2 HL Acetohydroxamic CAS 546-88-3 (2766)
Acetohydroxamic acid, N-Hydroxyacetamide; CH3.CO.NHOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C 1998FMa (21814) 165
K(MoO4+L+2H=MoO3L+H2O)=17.16
K(MoO4+2L+4H=MoO2L2+2H2O)=32.46
****
C2H6N2O2 HL CAS 5549-80-4 (833)
2-Amino-N-hydroxyacetamide, Glycine hydroxamic acid; H2N.CH2.CO.NH.OH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C 1999FCa (21994) 166
K(MoO4+6H+2L=MoO2H2L2)=47.06
K(MoO4+3H+L=MoO3HL)=24.43

K(MoO4+2H+L=MoO3L)=19.15
****
C2H7O2As HL Cacodylic acid CAS 75-60-5 (586)
Dimethylarsinic acid; (CH3)2.AsO2H

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl NaCl 25°C 0.60M C 1997KSc (22537) 167
K(4MoO4+L+7H)=46.20
Additional method: nmr
****
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
---
Mo(VI) sp NaClO4 23°C 1.0M C 1983BCd (24501) 168
K(2MoO4+2H+2L=Mo2O5(OH)2L2+H2O)=6.96
K(Mo2O5(OH)2L2+H=Mo2O5(OH)L2+H2O)=8.64
****
C3H6O2S H2L CAS 107-96-0 (437)
3-Mercaptopropanoic acid; HS.CH2.CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 25°C ? U 1963SCe (25219) 169
K(MoO4+3HL=MoOL3+3OH)=23(?)
Medium: acetate buffer
****
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
---
Mo(VI) gl NaCl 25°C 1.00M C H 1993CKb (25484) 170
B(1,2,1)=7.46
B(1,2,2)=15.71
B(1,2,3)=16.78
B(1,1,2)=11.76
B(p,q,r): pMoO4 +qHL +rH =(MoO4)pLqHq+r. B(1,1,3)=12.66, B(2,2,2)=16.07,
B(2,2,3)=21.70, B(2,2,4)=24.97, B(2,1,3)=18.44; other B(p,q,r); also DH

Mo(VI) sp NaClO4 25°C 1.0M C 1983BCc (25485) 171
K(MoO4+2HL+2H=MoO2L2)=-3.5
K(2MoO2L2+2H+3H2O=Mo2O5L2(H2O)2+2H2L)=-8.6
K(Mo2O5L2(H2O)2+H=Mo2O3(OH)3L2+H2O)=-7.6
****
C3H7NO2 HL B-Alanine CAS 107-95-9 (575)
3-Aminopropanoic acid; H2N.CH2.CH2.COOH

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C                          1998FMa (26467) 172
K(MoO4+2L+4H=MoO2L2+2H2O)=33.26
*************************************************************************
C3H7NO2S              H2L    Cysteine         CAS 52-90-4  (96)
2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  NaClO4 25°C 0.10M C  I                      2003GDa (26809) 173
                                          K(MoO4+L+2H=MoO3L+H2O)=21.4
Data for 0.1-1.0 M NaClO4. K=21.1 (I=0.30), 20.9 (I=0.50), 20.7 (I=0.7),
21.2 (I=1.0).
-------------------------------------------------------------------------
Mo(VI)     sp  NaCl   18°C 1.00M U                          1990CJa (26810) 174
                                          K(MoO4+L+2H=MoO3L+H2O)=18.8
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un 25°C    ?  U                          1963SCe (26811) 175
                                          K(MoO4+3HL=MoOL3+3OH)=18(?)
Medium: acetate buffer. K(?) Mo(V)=6.0
*************************************************************************
C3H8N2O2               HL    Ala-hydroxamic   CAS 16707-85-0  (1582)
2-Amino-N-hydroxypropanamide, Alanine hydroxamic acid; CH3.CH(NH2).CO.NH.OH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C                          1999FCa (27580) 176
                                          K(MoO4+6H+2L=MoO2H2L2)=45.90
                                          K(MoO4+3H+L=MoO3HL)=24.00
                                          K(MoO4+2H+L=MoO3L)=18.65
*************************************************************************
C3H8N2O2               HL                        (6039)
Sarcosinehydroxamic acid; CH3.NH.CH2.CO.NH.OH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C                          1999FCa (27586) 177
                                          K(MoO4+6H+2L=MoO2H2L2)=47.04
                                          K(MoO4+3H+L=MoO3HL)=24.52
                                          K(MoO4+2H+L=MoO3L)=19.48
*************************************************************************
C3H8N2O2               HL                        (6666)
beta-Alaninehydroxamic acid; NH2.CH2.CH2.CO.NHOH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C                          1998FMa (27608) 178
                                          K(MoO4+L+3H=MoO3HL+H2O)=25.81
K(MoO4+2L+6H=MoO2H2L2+2H2O)=49.76
```

****
C3H8O L n-Propanol CAS 71-23-8 (1914)
1-Propanol; CH3.CH2.CH2.OH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) nmr mixed -80°C ? U M 1971BPg (27644) 179
Medium: aq.propanol. -80 - +30 C
K(MoO2F2(H2O)2+L=MoO2F2L(H20)+H20)=-0.09;K(MoO2F2L(H20)+L=MO2F2L2+H20)=-0.62
****
C3H8O L isoPropanol CAS 67-63-0 (2024)
2-Propanol; CH3.CH(OH).CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) nmr mixed -80°C ? U M 1971BPg (27646) 180
Medium: aq.propan-2-ol. -80 - +30 C
K(MoO2F2(H2O)2+L=MoO2F2L(H20)+H20)=-0.60;K(MoO2F2L(H20)+L=MO2F2L2+H20)=-1.15
****
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
---
Mo(VI) ix oth/un 22°C 0.10M U K1=1.20 1973SDa (29999) 181
Metal ion: MoO2++. pH 2.5
****
C4H6O5 H2L Malic acid CAS 617-48-1 (393)
2-Hydroxybutane-1,4-dioic acid, Hydroxy-succinic acid; HOOC.CH2.CH(OH).COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl NaCl 25°C 1.0M C H 1997CRb (30675) 182
B(1,1,1)=7.47
B(1,1,2)=13.23
B(1,1,3)=15.87
B(1,2,2)=15.48
B(p,q,r): pMoO4+qL+rH=(MoO4)p(L)q(H)r. B(1,2,3)=20.13, B(1,2,4)=24.14,
B(4,2,8)=52.92, B(4,2,9)=54.35, B(4,2,10)=55.27, etc. DH by calorimetry.

Mo(VI) gl KNO3 20°C 0.20M U 1986BHd (30676) 183
K(MoO2(OH)4+L+2H=MoO2(OH)H-1L+3H2O)=13.7

Mo(VI) oth oth/un RT ? U 1981BCd (30677) 184
K(MoO2L2+2H+3H2O=Mo2O5L2OH)=22.2
K(MoO4+2L+2H=MoO2(OH)2L2)=13.9, K(MoO2L2(OH)2+H)=8.20
****
C4H6O6 H2L D-Tartaric acid CAS 147-71-7 (93)
D-Tartaric acid, D-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KNO3	20°C	0.20M	M			1982HHb (30977)	185

K(MoO2(OH)2+2L+2H=MoO2(H-1L)2+4H2O)=16.64
K(2MoO2(OH)2+2L+4H=(MoO2)2(H-2L)2+8H2O)=30.90

****

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
Mo(VI)	gl	NaCl	25°C	1.00M	C	H	B(1,2,2)=16.33 B(1,3,2)=19.99 B(1,4,2)=22.92 B(2,4,1)=24.81	1990CHc (31306)	186

B(2,5,1)=26.16, B(4,7,4)=56.22, B(4,8,4)=61.53, B(4,9,4)=63.98, B(4,6,2)= 43.4, B(4,7,2)=48.2. B(p,q,r): pMoO4 + qH + rL

Mo(VI)	sp	NaCl	18°C	1.00M	U		K(MoO4+2L+2H=MoO2H-2L2)=16.2	1989CPa (31307)	187

Data obtained from circular dichroism measurements

Mo(VI)	oth	oth/un	?	?	M		K(HMO4+HL)=2.36	1969PFa (31308)	188

Method: polarimetry

Mo(VI)	dis	NaClO4	20°C	0.10M	U		K(H2MoO4+2L)=7.66 ?	1963STc (31309)	189

****

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
Mo(VI)	sp	NaClO4	25°C	0.10M	C	I	K(MoO4+2H+L=MoO3L)=18.7	2001GZa (31891)	190

Data for 0.1-0.8 M NaClO4.

Mo(VI)	sp	NaClO4	25°C	0.15M	C		K(MoO4+2H+L=MoO3L)=1.26	1995GZb (31892)	191

Mo(VI)	gl	NaCl	25°C	1.00M	C	H	B(1,1,1)=6.54 B(1,1,2)=9.84 B(1,2,1)=6.57 B(1,2,2)=11.47	1993CHa (31893)	192

B(p,q,r): pMoO4+qHL+rH=(MoO4)p(HL)qHr. B(2,1,4)=21.20, B(2,1,5)=23.50, B(4,4,9)=50.86, B(4,4,10)=53.48, B(2,4,8)=37.74. Also DH by calorimetry.

```
Mo(VI)     sp  oth/un 25°C  1.0M C                        1982CPa (31894) 193
                                          K(MoO4+2H+L=MoO3L+H2O)=15.74
Medium not defined. pH 6.0.
-------------------------------------------------------------------------------
Mo(VI)     gl  oth/un 25°C 0.16M M                        1977RGa (31895) 194
                                          B(MoO4+2H+L=MoO3L)=16.79
-------------------------------------------------------------------------------
Mo(VI)     gl  NaClO4 25°C 0.10M U        K1=9.29   B2=17.00  1972SSe (31896) 195
                                          K3=3.88
Metal ion: MoO2++
*******************************************************************************
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
-------------------------------------------------------------------------------
Mo(VI)     gl  NaClO4 25°C  3.0M U                        1979ZLa (32304) 196
                                          B(MoO4+L+2H=MoO3L)=18.48
-------------------------------------------------------------------------------
Mo(VI)     gl  oth/un 25°C 0.15M U                        1966KRa (32305) 197
                                          K(MoO4+L+2H=MoO3L)=18.3
*******************************************************************************
C4H8N2O3               HL    Asparagine       CAS 70-47-3  (17)
2-Aminobutanedioic acid 4-amide; H2N.CH(CH2.CO.NH2).COOH
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Mo(VI)     gl  NaClO4 25°C 0.10M U        K1=8.06   B2=15.29  1973TSe (32712) 198
                                          K3=3.45
*******************************************************************************
C4H9NO2                HL    2-Aminobutyric   CAS 2835-81-6  (571)
2-Aminobutanoic acid; CH3.CH2.CH(NH2).COOH
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Mo(VI)     gl  KNO3   25°C 0.10M U TIH    K1=8.16   B2=15.61  1980SSf (33919) 199
                                          K3=3.62
*******************************************************************************
C4H10O                  L    Isobutanol       CAS 78-83-1  (4256)
2-Methylpropan-1-ol; CH3.CH(CH3).CH2.OH
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Mo(VI)     nmr oth/un -70°C    ?  U    M                 1971BPg (34650) 200
K(MoO2F2(H2O)2+L=MoO2F2(H2O)L+H2O)=-0.22
K(MoO2F2(H2O)L+L=MoO2F2L2+H2O)=-0.72
*******************************************************************************
C4H10O                  L    Butan-2-ol       CAS 15892-23-6  (3572)
sec-Butyl alcohol; C2H5.CH(OH)CH3
-------------------------------------------------------------------------------
```

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     nmr oth/un -70°C    ?  U    M                 1971BPg (34655) 201
K(MoO2F2(H2O)2+L=MoO2F2(H2O)L+H2O)=-0.24
K(MoO2F2(H2O)L+L=MoO2F2L2+H2O)=-0.70
*************************************************************************
C4H10O4                 L    Erythritol       CAS 149-32-6  (2706)
1,2,3,4-Tetrahydroxybutane; HO.CH2.CH(OH).CH(OH).CH2.OH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.10M U                         1990CVb (34712) 202
                                        B(2,2,1)=15.20
                                        B(2,3,1)=19.50
B(p,q,r): pMoO4+qH+rL=MoO4pHqLr. With (2R,2R)-butantetrol, D-threitol,
B(2,2,1)=14.60, B(2,3,1)=18.20
*************************************************************************
C4H11N3O2              HL                       CAS 471915-94-3  (8550)
2,4-Diamino-N-hydroxybutanamide;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C                         2002ECa (35179) 203
                                       K(MoO4+L+4H=MoO3H2L+H2O)=32.7
                                       K(MoO4+L+3H=MoO3HL+H2O)=27.8
K(MoO4+2L+8H=MoO2H4L2+2H2O)=63.65.
*************************************************************************
C4H14N2O6P2           H2L    EDDPO            CAS 1733-49-9  (2435)
1,2-Diaminoethane-N,N'-bis(methylenephosphonic) acid; (H2O3P.CH2.NH.CH2)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 0.60M C    M                    1987YAa (35889) 204
                                       B(10,5,2)=68.07
                                       B(11,5,2)=69.40
                                       B(11,7,1)=71.96
                                       B(12,7,1)=75.70
B(12,6,1)=69.04.   B(p,q,r)=pH+q(MoO4)+r(C6H5PO3)=Hp(MoO4)q(C6H5PO3)r
*************************************************************************
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
-------------------------------------------------------------------------
Mo(VI)     dis oth/un 25°C    ?  U        K1=10.57  B2=20.49  1968ABb (38031) 205
Metal ion: MoO2++
*************************************************************************
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
-------------------------------------------------------------------------
Mo(VI)     sp  NaClO4 25°C 0.10M C  I                     2000GZa (39100) 206
                                        K(MoO4+2H+L=MoO3L+H20)=17.54
Data for 0.1-1.0 M NaClO4. K=16.94 (I=0.4 M), 16.93 (I=0.5 M), 16.84
(I=0.7 M), 16.76 (I=1.0 M).
-------------------------------------------------------------------------
Mo(VI)     gl  KNO3   25°C 0.16M M                       1977RGa (39101) 207
                                        B(MoO4+2H+L=MoO3L)=16.79
-------------------------------------------------------------------------
Mo(VI)     gl  NaClO4 25°C 0.10M U        K1=9.24   B2=16.84  1972SSe (39102) 208
                                        K3=3.50
*************************************************************************
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
-------------------------------------------------------------------------
Mo(VI)     nmr oth/un 35°C 1.50M U  I                     1966KRa (39267) 209
                                        K(MoO4+L+HL=MoO3L)=18.2
At 25 C, using glass electrode, I=0.15 M, K=18.73
*************************************************************************
C5H10N2O3              HL    Glutamine        CAS 56-85-9  (18)
2-Aminopentanedioic acid 5-amide; H2N.CH(CH2.CH2.CO.NH2)COOH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  NaClO4 25°C 0.10M U        K1=7.90   B2=14.83  1973TSe (39826) 210
                                        K3=3.35
*************************************************************************
C5H10O5                 L                     CAS 1114-34-7  (6113)
D-Lyxose
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.10M C                       1989VCa (40339) 211
                                        B((MoO4)2H2L)=14.98
                                        B((MoO4)2H3L)=18.68
                                        K((MoO4)2H2L+H)=3.70
M=MoO4
*************************************************************************
C5H11NO2S              HL                    CAS 93964-73-9  (3633)
Cysteine ethyl ester; H2N.CH(CH2.SH).CO.OCH2.CH3
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un 25°C    ?  U                        1963SCe (41146) 212
                                        K(MoO4+3HL=MoOL3+3OH)=23(?)
Medium: acetate buffer
*************************************************************************
```

C5H12O L n-Pentanol CAS 71-41-0 (4298)
1-Pentanol; CH3(CH2)4.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	oth/un	-70°C	?	U	M		1971BPg (41640)	213

K(MoO2F2(H20)2+L=MoO2F2(H2O)L+H2O)=-0.30
K(MoO2F2(H20)L+L=MoO2F2L2+H2O)=-0.72

****

C5H12O L Isopentanol CAS 34713-94-5 (4299)
Isopentanol; CH3.CH2.CH(CH3).CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	nmr	oth/un	-70°C	0.10M	U	M		1971BPg (41641)	214

K(MoO2F2(H20)2+L=MoO2F2(H2O)L+H2O)=-0.24
K(MoO2F2(H20)L+L=MoO2F2L2+H2O)=-0.70

****

C5H12O5 L Arabitol CAS 488-82-4 (5403)
Arabitol; HO.CH2.HOCH.HCOH.HCOH.CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.10M	U		B(2,2,1)=16.35 B(2,3,1)=20.45	1990CVb (41676)	215

B(p,q,r): pMoO4+qH+rL=MoO4pHqLr

****

C5H12O5 L Ribitol CAS 488-81-3 (3009)
Ribitol, Adonitol; HO.CH2.HCOH.HCOH.HCOH.CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.10M	U		B(2,2,1)=15.55 B(2,3,1)=19.45	1990CVb (41680)	216

B(p,q,r): pMoO4+qH+rL=MoO4pHqLr

****

C5H12O5 L Xylitol CAS 87-99-0 (2139)
Xylitol; HO.CH2.HCOH.HOCH.HCOH.CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.10M	U		B(2,2,1)=16.25 B(2,3,1)=19.65	1990CVb (41688)	217

B(p,q,r): pMoO4+qH+rL=MoO4pHqLr

****

C6H2O4Br2 H2L Bromanilic acid CAS 4379-59-6 (1279)
3,6-Dibromo-2,5-dihydroxy-1,4-benzoquinone;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp NaClO4 25°C 2.00M U 1986VPa (42038) 218
K(HMoO3+H2L=MoO3HL+2H)=3.85

Mo(VI) sp oth/un 25°C 1.00M U 1980VPa (42039) 219
K(MoO4+L+2H=MoO3L)=13.35

Mo(VI) sp oth/un 25°C 0.20M U 1979PVa (42040) 220
K(MoO4+L+2H)=13.60
****
C6H2O4Cl2 H2L Chloranilic acd CAS 87-88-7 (1281)
3,6-Dichloro-2,5-dihydroxy-1,4-benzoquinone;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 30°C ? U K1=6.05 1981BMd (42055) 221

Mo(VI) sp oth/un 25°C 1.00M U 1980VPa (42056) 222
K(MoO4+L+2H=MoO3L)=13.28

Mo(VI) sp oth/un 25°C 0.20M U 1979PVa (42057) 223
K(MoO4+L+2H)=13.90

Mo(VI) sp NaClO4 25°C 0.37M U 1964LSd (42058) 224
K(Mo3O11+3HL)=2.30
****
C6H4O4 H2L CAS 615-94-1 (1280)
2,5-Dihydroxy-1,4-benzoquinone;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 25°C 1.00M U 1980VPa (42308) 225
K(MoO4+L+2H=MoO3L)=15.30
****
C6H5Li L CAS 591-51-5 (2352)
Phenyl lithium;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp non-aq 25°C 100% U I M 1981PKa (42341) 226
K(MoA+L)=3.4
Medium: THF. A=Mo(CO)4(Ph2P(OCH2CH2)3.OPPh2. In benzene: K > 5
****
C6H5NO4 H2L 4-Nitrocatechol CAS 3316-09-4 (890)
1,2-Dihydroxy-4-nitrobenzene; O2N.C6H3(OH)2

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

Mo(VI) sp oth/un 25°C .575M U 1980NKa (42936) 227
K(H2MoO4L+H2L=MoO2L2+2H2O)=3.3
K(MoO4+H2L)=2.21
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5, pH 8

****

C6H5O2Cl H2L 4-Cl-Catechol CAS 2138-22-9 (1656)
1,2-Dihydroxy-4-chlorobenzene; Cl.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U		1980NKa (43084)		228
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.4		
							K(MoO4+H2L)=2.07		
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8									
Mo(VI)	sp	KCl	25°C	0.10M	U		1962HAb (43085)		229
							K(MoO4+2H2L)=5.85		

****

C6H6N2O2 HL CAS 5657-61-4 (1430)
Nicotinylhydroxamic acid; C5H4N.CO.NH.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	NaClO4	25°C	0.10M	U		1964RMa (43437)		230
							K(?)=6.3		
							K(?)=6.7		

****

C6H6O2 H2L Catechol CAS 120-80-9 (534)
1,2-Dihydroxybenzene, pyrocatechol; HO.C6H4.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U		1980NKa (43790)		231
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.3		
							K(MoO4+H2L)=1.49		
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8									
Mo(VI)	sp	oth/un	20°C	0.10M	U		1971SBd (43791)		232
							K(MoO4+2H2L=MoO2L2+2H2O)=5.09		
By electrophoresis, phosphate buffer, K=5.21									
Mo(VI)	sp	KNO3	20°C	0.10M	U		1969HBa (43792)		233
							K(MoO4+2H2L=MoO2L2)=5.00		
Mo(VI)	sp	oth/un	20°C	0.10M	U		1964PCa (43793)		234
							K(MoO4+2H2L=MoO2L2)=5.27		
Medium: 0.1 M NaHSO3									
Mo(VI)	sp	oth/un	26°C	0.10M	U		1960HAa (43794)		235

K(MoO4+2H2L=MoO2L2)=4.61
Medium: 0.1 M NaHSO3

Mo(VI) sp oth/un 20°C ? U 1959HAa (43795) 236
K(MoO4+2H2L=MoO2L2)=5.27
****
C6H6O3 H3L Pyrogallol CAS 87-66-1 (696)
1,2,3-Trihydroxybenzene; C6H3(OH)3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 25°C .575M U 1980NKa (43967) 237
K(H2MoO4L+H2L=MoO2L2+2H2O)=3.2
K(MoO4+H2L)=1.97
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8

Mo(VI) sp oth/un 20°C 0.10M U 1971SBd (43968) 238
K(MO4+2H3L=MO2(HL)2+2H2O)=5.43
By electrophoresis, phosphate buffer, K=5.57

Mo(VI) sp oth/un 20°C ? U 1959HAa (43969) 239
K(MoO4+2H3L=MoO2(HL)2)=5.48

Mo(VI) sp oth/un 20°C ? U 1958PIa (43970) 240
K(MoO4+2H3L=MoO2(HL)2)=5.68 ?
****
C6H6O5S H3L CAS 7134-09-0 (3687)
3,4-Dihydroxybenzenesulfonic acid; (HO)2.C6H3.SO3H

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 20°C 0.10M U 1971SBd (44284) 241
K(MoO4+2H2L=MoO2L2+2H2O)=5.28
****
C6H6O8S2 H4L Tiron CAS 149-45-1 (104)
4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)2.C6H2(SO3H)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C M 2002FCa (44474) 242
K(MoO4+2H+L=MoO3L+H2O)=23.8
K(MoO4+4H+2L=MoO2L2+2H2O)=46.96, K(2MoO4+6H+2L=Mo2O6H2L2+2H2O)=61.6,
K(MoO4+4H+A+L=MoO2AL+2H2O)=41.5. A is acetohydroxamic acid.

Mo(VI) sp oth/un 20°C 0.10M U 1971SBd (44475) 243
K(MoO4+2H2L=MoO2L2+2H2O)=6.59
****
C6H7O3As H2L Phenylarsonic CAS 98-05-5 (3690)
Benzenearsonic acid, phenylarsonic acid; C6H5AsO3H2

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C   1MM C                         1987YTa (45177) 244
Values given for B(pH+qMoO2+C) where C=C6H5AsO3H- and H2AsO4-.
*************************************************************************
C6H8O6               H2L    Ascorbic acid    CAS 50-81-7  (285)
Ascorbic acid (Vitamin C);
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un   ?     ?  U                         1966SAb (45648) 245
                                      K(?)=4.6
*************************************************************************
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
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 1.00M U T H    K1=5.12   B2=9.17   1995CRa (46180) 246
                                      B3=11.94
DH(B1)=-1.3; DH(B2)=-5.8; DH(B3)=-10.1 kJ mol-1. TDS(B1)=28; TDS(B2)=47;
TDS(B3)=58 kJ mol-1. Data also at 275 K
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 1.00M U T H                   1995CRa (46181) 247
                                      B(111)=8.35
                                      B(121)=15.00
                                      B(131)=19.62
                                      B(141)=21.12
B(242)= 31.02; B(252)= 35.86; B(262)= 40.08; B(142)= 25.34; B(152)= 29.54;
B(162)= 33.34; etc.   B(pqr): pMoO4 + qH + rL = (MoO4)pHqLr
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 1.00M C   H                  1991CKa (46182) 248
                                      B(1,1,1)=8.25
                                      B(1,2,1)=15.08
                                      B(1,3,1)=19.66
B(p,q,r): p(WO4--)+qH+rL=(WO4--)pHqLr.  By calorimetry, DH(1,1,1)=-49,
DH(1,2,1)=-60, DH(1,3,1)=-67 kJ mol-1.
-------------------------------------------------------------------------
Mo(VI)     gl  KNO3   20°C 0.20M U                       1986BHd (46183) 249
                                      K(MoO2(OH)4+L+2H=MoO2H-1L)=16
K(MoO2(OH)4+L+3H=MoO2H-1L+4H2O)=20.4
K(MoO2(OH)H-1L+H=MoO2H-1L+H2O)=4.8
-------------------------------------------------------------------------
Mo(VI)     gl  NaCl   25°C 1.00M C   H                  1986CVa (46184) 250
                                      B(1,1,1)=8.25
                                      B(1,1,2)=15.08
                                      B(1,1,3)=19.66
                                      B(2,1,4)=27.27
B(2,1,5)=31.86. B(p,q,r): pMoO4+qL+rH=(MoO4)pLqHr. DH(1,1,1)=-49.4 kJ mol-1;
DH(1,1,2)=-60.2; DH(1,1,3)=-67.4; DH(2,1,4)=-124
```

****

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
Mo(VI)	gl	NaClO4	25°C	0.10M	C	I	K(MoO4+2H+L=MoO3L+H2O)=18.72	2003MZa (46922)	251

Also data for I=0.5, 0.7 and 1.0 M NaClO4. For I=1.0 M, K=17.97.

Mo(VI)	gl	NaCl	25°C	1.00M	C	H	B(1,1,2)=17.78 B(1,1,3)=21.02 B(1,1,4)=22.57 B(2,2,7)=45.16	1994CHb (46923)	252

B(p,q,r): pMoO4+qL+rH=(MoO4)pLqHr. Also B(2,2,8)=47.95, B(2,1,5)=30.74, B(2,1,6)=33.09. DH(1,1,2)=-69,DH(1,1,3)=-71.2,DH(2,2,7)=-123,DH(2,2,8)=-132.

Mo(VI)	sp	NaClO4	25°C	0.5M	C		K(MoO4+2H+L=MoO3L+H2O)=17.90	1976CLa (46924)	253

Method: stopped flow spectrophotometry

Mo(VI)	nmr	oth/un	28°C	1.30M	U		K(MoO4+WO3L=MoO3L+WO4)=0.15	1967MEa (46925)	254
Mo(VI)	gl	oth/un	25°C	0.15M	U		K(MoO4+L+2H=MoO3L)=18.94	1966KRa (46926)	255
Mo(VI)	nmr	oth/un	35°C	2.00M	U		K(MoO4+L+2H=MoO3L)=18.90	1966KRa (46927)	256

****

C6H10N4O2 HL CAS 25486-00-4 (2554)
2-Amino-3-(4'-imidazolyl)propanehydroxamic acid, Histidine-hydroxamic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.20M	C		K(MoO4+6H+2L=MoO2H2L2)=48.5 K(MoO4+3H+L=MoO3HL)=24.77 K(MoO4+2H+L=MoO3L)=18.44 K(MoO4+8H+2L=MoO2H4L2)=55.1	1999FCa (47907)	257

K(MoO4+7H+2L=MoO2H3L2)=52.88

****

C6H10O8 H2L Mucic acid CAS 526-99-8 (3650)
2,3,4,5-Tetrahydroxyhexanedioic acid, Galactaric acid; HOOC.(CHOH)4.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	kin	oth/un	20°C	?	U		K(?)=7.57	1971FPb (48438)	258

****
C6H10O8 H2L Saccharic acid CAS 87-73-0 (1191)
D-2,3,4,5-Tetrahydroxy-1,6-hexanedioic acid, Glucaric acid; HOOC.(CHOH)4.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) kin oth/un 25°C 0.10M U 1971FPb (48484) 259
K(?)=7.64
****
C6H12N2O4 H2L EDDA CAS 5657-17-0 (119)
1,2-Diaminoethane-N,N'-diethanoic acid; HOOC.CH2.NH.CH2.CH2.NH.CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl NaClO4 25°C 3.0M U 1979ZLa (49254) 260
B(MoO4+L+2H=MoO3L)=19.69
****
C6H12O5 L L-Rhamnose CAS 634-74-2 (3659)
6-Deoxy-L-mannose;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.10M C 1989VCa (49508) 261
B((MoO4)2H2L)=13.89
B((MoO4)2H3L)=17.59
K((MoO4)2H2L+H)=3.70
****
C6H12O6 L D-Mannose CAS 3458-28-4 (1562)
D-Mannose

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.10M C 1989VCa (49607) 262
B((MoO4)2H2L)=14.50
B((MoO4)2H3L)=18.10
K((MoO4)2H2L+H)=3.60
M=MoO4
****
C6H12O7 HL Gluconic acid CAS 526-95-4 (904)
D-Gluconic acid, 2,3,4,5,6-Pentahydroxyhexanoic acid; HO.CH2(CHOH)4.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) kin oth/un ? ? U 1972FPb (49737) 263
K(2MoO3+L=(HMoO3)2(H-2L))=7.12
****
C6H13NO2 HL CAS 4312-93-0 (4386)
Hexanohydroxamic acid; CH3.CH2.CH2.CH2.CH2.CO.NH.OH

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

```
---------------------------------------------------------------------------
Mo(VI)     sp  oth/un   ?     ?  U                        1971PMd (50228) 264
                                        K(MoO2+L)=15.02
                                        K(MoO2+2L)=18.04
***************************************************************************
C6H14O6                 L    D-Dulcitol       CAS 608-66-2  (3663)
D-Galactitol;
---------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
---------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.10M U                        1990CVb (51062) 265
                                        B(2,2,1)=17.30
                                        B(2,3,1)=20.90
B(p,q,r): pMoO4+qH+rL=MoO4pHqLr
***************************************************************************
C6H14O6                 L    D-Mannitol       CAS 69-65-8  (3664)
D-Mannitol;
---------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
---------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.10M U                        1990CVb (51085) 266
                                        B(2,2,1)=16.70
                                        B(2,3,1)=20.80
B(p,q,r): pMoO4+qH+rL=MoO4pHqLr
---------------------------------------------------------------------------
Mo(VI)     gl  KNO3   21°C 0.10M C                        1978MBc (51086) 267
Medium pH 3-5. K(2MoO4+2H+L=Mo2O5(H-4L)+3H2O)=16.89
K(Mo2O5(H-4L)+H=HM2O5(H-4L))=3.82
---------------------------------------------------------------------------
Mo(VI)     kin oth/un   ?     ?  U                        1972FPa (51087) 268
                                        K(2H2MoO4+L=(H2MoO4)2L)=7.12
***************************************************************************
C6H14O6                 L    Glucitol         CAS 50-70-4  (2878)
D-Sorbitol;
---------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
---------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.10M U                        1990CVb (51105) 269
                                        B(2,2,1)=16.60
                                        B(2,3,1)=20.50
B(p,q,r): pMoO4+qH+rL=MoO4pHqLr
---------------------------------------------------------------------------
Mo(VI)     gl  KNO3   21°C 0.10M C                        1978MBc (51106) 270
Medium pH 3-5.  K(2MoO4+2H+L=Mo2O5(H-4L)+3H2O)=16.90
K(Mo2O5(H-4L)+H=HM2O5(H-4L))=3.88
---------------------------------------------------------------------------
Mo(VI)     kin oth/un   ?     ?  U                        1972FPa (51107) 271
                                        K(2H2MoO4+L=(H2MoO4)2L)=6.64
***************************************************************************
C6H15N3O2               HL                    CAS 52760-35-7  (6670)
```

Lysine hydroxamic acid; H2N.(CH2)4.CH(NH2)CO.NHOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.20M	C			2002ECa (51429)	272
							K(MoO4+L+4H=MoO3H2L+H2O)=34.16		
							K(MoO4+L+3H=MoO3HL+H2O)=29.15		
K(MoO4+2L+8H=MoO2H4L2+2H2O)=66.65.									

****

C7H6O3 H2L CAS 139-85-5 (881)
3,4-Dihydroxybenzaldehyde, protocatechuic aldehyde; C6H3(OH)2.CHO

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U			1980NKa (54356)	273
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.4		
							K(MoO4+H2L)=2.15		
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8									
Mo(VI)	sp	oth/un	20°C	?	U			1959HAa (54357)	274
							K(MoO4+H2L=MoO2L2)=7.75		

****

C7H6O4 H3L CAS 409-79-9 (1115)
2,5-Dihydroxybenzoic acid; C6H3(OH)2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	0.10M	U		K1=2.58	1976DVa (54588)	275

****

C7H6O4 H3L Protocatechuic CAS 99-50-3 (875)
3,4-Dihydroxybenzoic acid; C6H3(OH)2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U			1980NKa (54683)	276
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.1		
							K(MoO4+H2L)=1.98		
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8									
Mo(VI)	sp	oth/un	20°C	?	U			1959HAa (54684)	277
							K(MoO4+2H3L=MoO2H2L2)=6.68		

****

C7H6O5 H4L CAS 610-02-6 (3725)
2,3,4-Trihydroxybenzoic acid; (HO)3.C6H2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	20°C	0.10M	U			1971SBd (54721)	278
K(MoO4+2H3L=MoO2(HL)2+2H20)=5.24									

****

C7H6O5 H4L Gallic acid CAS 149-91-7 (446)
3,4,5-Trihydroxybenzoic acid; C6H2(OH)3.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U			1980NKa (54754)	279
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.2		
							K(MoO4+H2L)=2.32		

Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8

Mo(VI)	sp	oth/un	20°C	0.10M	U			1971SBd (54755)	280
K(MoO4+2H3L=MoO2(HL)2+2H2O)=5.38									

Mo(VI)	sp	oth/un	20°C	?	U			1959HAa (54756)	281
							K(MoO4+2H3L=MoO2H2L2)=6.83		

****

C7H7NO2 HL CAS 495-18-1 (184)
Benzohydroxamic acid; C6H5.CO.NH.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	none	25°C	0.0	U	T H	K1=7.49 B2=14.40	1980ABa (55509)	282

At 35 C: K1=7.38, K2=6.79; DH(K1)=-4.6, DH(K2)=-5.0

****

C7H8O2 H2L CAS 488-17-5 (1657)
1,2-Dihydroxy-3-methylbenzene; CH3.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U			1980NKa (56056)	283
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.3		
							K(MoO4+H2L)=1.52		

Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8

****

C7H8O2 H2L Methylcatechol CAS 452-86-8 (525)
1,2-Dihydroxy-4-methylbenzene; CH3.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	.575M	U			1980NKa (56071)	284
							K(H2MoO4L+H2L=MoO2L2+2H2O)=3.1		
							K(MoO4+H2L)=1.28		

Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8

Mo(VI)	sp	oth/un	20°C	.014M	U			1962HAb (56072)	285
							K(MoO4+2H2L)=4.74		

****

C8H7O3Cl H2L CAS 99-40-1 (3818)
4-Chloro-2,3-dihydroxyacetophenone, 3-acetyl-6-chlorocatechol;

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C 0.10M U                         1963HAb (59247) 286
                                        K(MoO4+2H2L)=7.03
*************************************************************************
C8H8O3                 HL    Mandelic Acid    CAS 611-72-3  (80)
2-Phenyl-2-hydroxyethanoic acid; C6H5.CH(OH).COOH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     vlt NaClO4 25°C 0.50M U                         1984ZZa (59853) 287
                                        K(MoO2+HL)=2.42
*************************************************************************
C8H8O3                 H2L                      CAS 2848-25-1  (3799)
3,4-Dihydroxyacetophenone,  (4-acetylcatechol)
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un 20°C    ?  U                         1961HAa (59893) 288
                                        K(MoO4+2H2L=MoO2L2)=6.74
*************************************************************************
C8H11NO2               H2L    Dopamine         CAS 579-59-9  (251)
2-(3',4'-Dihydroxyphenyl)ethylamine; (HO)2.C6H3.CH2.CH2.NH2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C 0.10M U                         1963HAc (61082) 289
                                        K(MoO4+2H2L=MoO2L2)=5.57
*************************************************************************
C8H11NO3               H2L    Noradrenaline    CAS 138-65-8  (253)
Norepinephrine, 3,4-Dihydroxyphenylethanolamine; (HO)2C6H3.CH(CH2.NH2).OH
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C 0.10M U                         1962HAb (61166) 290
                                        K(MoO4+2H2L)=5.82(?)
*************************************************************************
C9H5NOBr2               HL                      CAS 521-74-4  (3279)
5,7-Dibromo-8-hydroxyquinoline;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     dis oth/un 20°C  var  U        K1=14.22  B2=28.32  1967DBa (63522) 291
Metal: MoO2++ , Medium: var (HCl,HCLO4)
*************************************************************************
C9H6O4                 H2L    Esculetin        CAS 305-01-1  (3853)
6,7-Dihydroxycoumarin;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
```

```
Mo(VI)     sp  alc/w    ?   50%  U                        1963JSa (63953) 292
                                        K(MoO4+2H2L)=3.65(?)
Medium: 50% EtOH
**************************************************************************
C9H7NO                  HL    Oxine            CAS 148-24-3  (504)
8-Hydroxyquinoline (8-quinolinol);
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     sp  NaNO3  25°C 0.20M U                        1968KDa (64319) 293
                                        K(H+HL+MoO4)=10.36
By kinetics, K=10.29
--------------------------------------------------------------------------
Mo(VI)     dis oth/un   ?     ?  U        K1=17.04  B2=33.02  1967BDa (64320) 294
                                        K(MoO(OH)+L)=16.44
                                        K(MoO(OH)+2L)=30.02
Metal: MoO2++
--------------------------------------------------------------------------
Mo(VI)     dis oth/un   ?     ?  U        K1=12.7         1967BDa (64321) 295
Metal: MoO++++
**************************************************************************
C9H7NO3S2             H2L                   CAS 58447-10-2  (4675)
8-Mercaptoquinoline-5-sulfonic acid;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     sp  oth/un   ?     ?  U        B2=22.8         1968ABa (64427) 296
Metal:MoO2++
**************************************************************************
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
--------------------------------------------------------------------------
Mo(VI)     gl  KNO3   16°C 0.10M U                        1969GTa (64565) 297
                                        K(MoO4+L+2H=MoO3L)=19.53
**************************************************************************
C9H11NO2               HL                       (4650)
5-Methyl-2-hydroxyacetophenone oxime; (CH3)(HO).C6H3.C(:N.OH).CH3
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Mo(VI)     sp  alc/w  30°C    ?  U                        1970GMf (66027) 298
                                        K(MoO4+2H2L=MoO2L2)=8.69
Medium: EtOH
**************************************************************************
C9H12N2O4             H3L                      (6664)
3,4-Dihydroxyphenylalanine hydroxamic acid, DOPA hydroxamic acid;
H2N.CH(CH2.C6H3(OH)2CO.NHOH
--------------------------------------------------------------------------
```

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KCl    25°C 0.20M C    M                  2002FCa (66621) 299
                                        K(MoO4+8H+2L)=65.29
                                        K(MoO4+6H+2L)=56.81
                                        K(2MoO4+8H+2L)=70.65
                                        K(MoO4+3H+L)=28.81
K(MoO4+2H+L)=20.91.
*************************************************************************
C9H13NO3              H2L    Corbadrine       CAS 50731-42-5  (3880)
1-(3',4'-Dihydroxyphenyl)-2-aminopropanol;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C 0.10M U                       1962HAb (66818) 300
                                        K(MoO4+2H2L=MoO2L2)=5.92
*************************************************************************
C9H13NO3              H2L    (-)Adrenaline    CAS 51-43-4  (252)
4-(1-Hydroxy-2-(methylamino)ethyl)-1,2-dihydroxybenzene,
Epinephrine;CH3NHCH(OH)C6H3(OH)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  KCl    25°C 0.10M U                       1962HAb (66865) 301
                                        K(MoO4+2H3L=MoO2(HL)2)=5.76(?)
*************************************************************************
C10H8O2               H2L                    CAS 92-44-4  (1658)
2,3-Dihydroxynaphthalene;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un 25°C .575M U                       1980NKa (69774) 302
                                        K(H2MoO4L+H2L=MoO2L2+2H2O)=3.5
                                        K(MoO4+H2L)=2.43
Medium: 0.1 M NH4OH, 0.08 M Na2S2O5. pH 8
-------------------------------------------------------------------------
Mo(VI)     sp  oth/un 20°C 0.10M U                       1973PAc (69775) 303
                                        K(MoO4+2H2L=MoO2L2+2H2O)=6.31
Medium: phosphate buffer. By electrophoresis: K(MoO4+2H2L=MoO2L2+2H2O)=6.15
*************************************************************************
C10H8O4               H2L    4-Me-Esculetin   CAS 529-84-0  (3890)
4-Methyl-6,7-dihydroxycoumarin
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  alc/w    ?   50%  U                       1963JSa (69790) 304
                                        K(MoO4+2H2L=MoO2L2)=7.55
Medium: 50% EtOH
*************************************************************************
C10H8O5S              H3L    DHNSA            (877)
```

2,3-Dihydroxynaphthalene-6-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	20°C	0.10M	U			1971SBd (69854)	305
							K(MoO4+2H2L=MoO2L2+2H2O)=6.25		
By electrophoresis and phosphate buffer: K=6.32									

****

C10H8O8S2 H4L Chromotropic ac CAS 148-25-4 (1875)
1,8-Dihydroxynaphthalene-3,6-disulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	NaClO4	20°C	0.10M	U			1970BGb (69961)	306
							K(H2MoO4+H2L=HMoO3L+H)=-0.8		
							K(HMoO3L+H2L=MoO2L2+H)=-2.8		
Metal: MoO4--									

****

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
Mo(VI)	gl	NaClO4	25°C	3.0M	U			1979ZLa (73972)	307
							B(MoO4+L+2H=MoO3L)=18.76		
							B(2MoO4+L+2H=Mo2O6L)=36.0		
Mo(VI)	gl	NaClO4	25°C	0.10M	U	T		1968NPa (73973)	308
							K(MoO3+HL)=8.22		
							K(MoO3+L)=10.0		
							K(2MoO3+L)=19.16		
							K(H+Hn-1(MoO3)2L)=3.16, n=1		
K(n=2)=2.87, K(n=3)=2.21, K(n=4)=1.93									
Mo(VI)	gl	oth/un	25°C	0.15M	U			1966KRa (73974)	309
							K(MoO4+L+2H)=18.6		
							K(MoO4+MoO3L+2H)=17.5		
							K(MoO3L+H)=8.1		
Mo(VI)	nmr	oth/un	35°C	1.0M	U			1966KRa (73975)	310
							K(MoO4+L+2H)=18.5		
							K(MoO4+MoO3L+2H)=17.2		
							K(MoO3L+H)=7.5		
I=1.0-2.5									
Mo(VI)	nmr	oth/un	35°C	?	U			1966KUb (73976)	311
							K(MoO4+HL+H=MoO3L)=8.8		
							K(MoO3L+H)=7.5		
							K(2MoO4+L+4H=(MoO3)2L)=35.1		
							K(MoO3+L)=10.7		

K(2MoO3+L)=19.5, K((MoO3)2L+H2L=2MoO3HL)=0.26
****
C10H18N4O6 H2L (4504)
Hexanoic acid bis(3-hydroxycarbamoyl-methyl)amide; HONHCOCH2NHCO(CH2)4CONHCH2CONHOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C 1998FMa (75569) 312
K(MoO4+L+4H=MoO2L+2H2O)=30.45
K(MoO4+L+3H=MoO3HL+H2O)=25.52
For the propylamide analogue Kvalues are 30.88; 26.76
****
C10H20N4O4 H2L CAS 475984-27-1 (6717)
Piperazine-1,4-bis(N-methylacetohydroxamic acid); C4H8N2(CH2.CO.N(OH)CH3)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C 2002FCb (75896) 313
K(MoO4+3H+L=MoO3HL+H2O)=27.4
K(2MoO4+9H+2L=Mo2O4HL2+4H2O)=74.7, K(2MoO4+10H+2L=Mo2O4H2L2+4H2O)=77.5,
K(2MoO4+11H+2L=Mo2O4H3L2+4H2O)=80.5. An alternative model given also.
****
C10H25N5 L 15-Ane-N5 CAS 295-64-7 (99)
1,4,7,10,13-Pentaazacyclopentadecane; cyclo(-(HN.CH2.CH2)5-)

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) vlt NaClO4 25°C 0.20M C 1999SSe (76737) 314
K(MoO4+H3L)=2.11
Method: differentail pulse polarography.
Also data for selenate, selenite and pyrophosphate as guest ions.
****
C11H17NO3 H2L Isoprenaline CAS 586-06-1 (3950)
3,4-Dihydroxy-1-(1'-hydroxy-2'-(propylamino)ethyl)benzene;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp KCl 25°C 0.10M U 1963HAc (79158) 315
K(MoO4+2H2L=MoO2L2)=5.87
****
C11H21N3O5 H2L CAS 499238-77-6 (8837)
N-Hydroxy-N'-[4-(hydroxymethylamino)-4-oxobutyl]-N-methylpentanediamide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl KCl 25°C 0.20M C 2002FBb (79795) 316
K(MoO4+L+4H=MoO2L+2H2O)=31.27
K(MoO4+L+3H=MoO3HL+H2O)=26.62
****
C12H11N3O4S H2L (4003)

3-Hydroxy-3-phenyl-1-(4'-sulfonyl)triazene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	?	U			1958DSa (80941)	317
							K(?)=12.87		

****

C12H23N3O5 H2L CAS 499238-78-7 (8836)
N-Hydroxy-N'-[5-(hydroxymethylamino)-5-oxopentyl]-N-methylpentanediamide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.20M	C			2002FBb (82985)	318
							K(MoO4+L+4H=MoO2L+2H2O)=31.41		
							K(MoO4+L+3H=MoO3HL+H2O)=26.68		

****

C12H23N3O5 H2L CAS 499238-79-8 (8835)
N-Hydroxy-N'-[6-(hydroxymethylamino)-6-oxohexyl]-N-methylbutanediamide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KCl	25°C	0.20M	C			2002FBb (82995)	319
							K(MoO4+L+4H=MoO2L+2H2O)=33.07		
							K(MoO4+L+3H=MoO3HL+H2O)=26.79		

****

C12H30N6 L CAS 296-35-5 (143)
1,4,7,10,13,16-Hexaazacyclooctadecane; cyclo(-(NH.CH2.CH2)6-)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	vlt	NaClO4	25°C	0.20M	C			1999SSe (84343)	320
							K(MoO4+H3L)=2.14		

Method: differentail pulse polarography.
Also data for selenate, selenite and pyrophosphate as guest ions.

****

C13H10O3 H2L CAS 5876-92-6 (4009)
3,4-Dihydroxybenzophenone; C6H5.CO.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	25°C	0.01M	U			1962HAb (84991)	321
							K(MoO4+2H2L=MoO2L2)=6.75		

****

C13H15NO7 H3L CAS 98531-21-6 (8057)
2-Hydroxybenzylamine-N,N,O-triethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	NaCl	30°C	0.50M	C			1991HYa (85761)	322
							K(MoO4+2H+L)=17.36		

K(MoO4+3H+L)=20.60

****

C14H7O5Cl3 H3L (5107)

2,3,7-Trihydroxy-9-trichloromethylfluorone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	KNO3	25°C	0.50M	U			1972ASb (86590)	323
							K(MoO2OH+H2L)=17.10		

****

C14H8O6 H4L Quinalizarin CAS 81-61-8 (1056)

1,2,5,8-Tetrahydroxyanthraquinone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	alc/w	25°C	50%	U			1970RBb (86682)	324
							K(?)=4.48 (pH=5.0)		

****

C14H8O7S H3L DASA CAS 83-61-4 (950)

1,2-Dihydroxyanthraquinone-3-sulfonic acid, Alizarin Red S;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	NaNO3	25°C	0.10M	U			1983KMa (86742)	325
							B(MoO4H2L)=20.18		
							B(MoO4H3L)=24.93		
Mo(VI)	sp	NaClO4	25°C	0.10M	U			1963SDf (86743)	326
							K(MoO4+H2L=MoO2L2)=9.2(?)		
Mo(VI)	sp	oth/un	25°C	?	U		B2=9.6	1959DBb (86744)	327

****

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
Mo(VI)	gl	KNO3	25°C	0.10M	U			1971LUa (89325)	328
							K(2MoO4+H5L=(MoO3)2HL)=15.01		
							K(MoO4+H5L=MoO3H3L+H2O)=8.53		
							K(MoO4+H4L=MoO3H2L+H2O)=7.31		
							K(MoO4+H3L=MoO3HL+H2O)=4.87		
							K(MoO4+H2L=MoO3L+H2O)=2.55		

****

C15H10O4 H2L CAS 38183-04-9 (4051)

6,7-Dihydroxy-4-phenylcoumarin (4-phenylesculetin)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	alc/w	?	50%	U			1963JSa (90987)	329

K(MoO4+2H2L=MoO2L2)=8.20(?)

Medium: 50% EtOH

****

C15H10O4 H2L (4052)

7,8-Dihydroxy-3-phenylcoumarin (3-phenyldaphnetin)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	alc/w	32°C	50%	U		1966JKb (90988)		330
							K(MoO4+H2L=MoO2L2)=4.5(?)		

Medium: 50% EtOH, 0.2 M KCl

****

C15H10O5 H3L Galangin CAS 548-83-4 (4053)

3,5,7-Trihydroxyflavone (3,5,7-Trihydoxy-2-phenylchromone)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	oth/un	28°C	?	U		1964KSc (90993)		331
							K(MoO4+H3L=MoO3HL)=4.58(?)		

****

C15H11N3O4S H2L (5130)

7-Phenylazo-8-hydroxyquinoline-5-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KNO3	16°C	0.10M	U		1969GTa (91337)		332
							B((MoO4)H2L)=18.12		

****

C15H11N3O7S2 H3L CAS 17852-90-3 (5131)

7-(4-Sulfophenylazo)-8-hydroxyquinoline-5-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	KNO3	16°C	0.10M	U		1969GTa (91350)		333
							B((MoO4)H2L)=17.98		

****

C16H14O5 H3L CAS 966-64-3 (5143)

2,3,7-Trihydroxy-9-propylfluorone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	sp	KNO3	25°C	0.50M	U		1972ASb (93590)		334
							K(MoO2OH+H2L)=17.27		
							K(MoO2+2H2L)=26.50		

****

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

```
Mo(VI)     dis non-aq  RT  100%  C  I                    1992SGa (95510) 335
                                        K'=4.28
Method: solvent extraction into CCl4. K':
-------------------------------------------------------------------------
Mo(VI)     dis non-aq  RT  100%  C  I                    1992SGa (95511) 336
                                        K'=4.28
By solvent extraction into CCl4. K': H2MoO4+H2L2=MoO2L2(HL)2(org)+H2O
Also data for C6H6 (K'=4.02), C2H4Cl2 (3.90), CHCl3 (3.55), MIBK (3.48).
*************************************************************************
C18H30N4O12          H6L    TTHA            CAS 869-52-3  (694)
Triethylenetetraaminehexaethanoic acid;((HOOC.CH2)2N.CH2.CH2.N(CH2.COOH).CH2)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     gl  KNO3   25°C 0.10M U                        1971LUa (98070) 337
                                        K(2MoO4+H6L=(MoO3)2H2L)=13.81
                                        K(2MoO4+H5L=(MoO3)2HL)=11.78
                                        K(2MoO4+H4L=(MoO3)2L)=8.42
                                        K(MoO4+H6L=MoO3H4L)=7.45
K(MoO4+H5L=MoO3H3L)=6.88, K(MoO4+H4L=MoO3H2L)=5.64, K(MoO4+H3L=MoO3HL)=3.16,
K(MoO4+H2L=MoO3L)=3.14
*************************************************************************
C19H13N3O7S2         H3L    SNAZOXS          CAS 117-87-3  (995)
8-Hydroxy-7-(4'-sulfo-1'-naphthylazo)-quinoline-5-sulfonic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  NaClO4  RT  0.10M C        K1=9.20        1987APb (99047) 338
-------------------------------------------------------------------------
Mo(VI)     gl  KNO3   16°C 0.10M U                        1969GTa (99048) 339
                                        K(MoO4+L+2H)=17.82
*************************************************************************
C20H11NO6S2          H2L                    CAS 66451-75-0  (8985)
6-Hydroxy-5-oxo-5H-dibenzo[a,j]phenoxazine-11-sulfonic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  NaClO4 25°C 0.10M C                        1977SLb (99529) 340
                                        B((MoO2)2L)=10.8
B((MoO2)2L) is the effective constant at pH 2.3.
*************************************************************************
C20H11NO6S2          H2L                    CAS 55968-31-5  (8984)
6-Hydroxy-5-oxo-5H-dibenzo[a,j]phenoxazine-9-sulfonic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Mo(VI)     sp  NaClO4 25°C 0.10M C                        1977SLb (99531) 341
                                        K1eff=3.62
Medium pH 2.2.
*************************************************************************
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C20H11NO9S2 H3L CAS 65501-73-7 (8982)
6-Hydroxy-5-dibenzo[a,j]phenoxazone-8,11-disulfonic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp NaClO4 25°C 0.10M C 1977SLb (99535) 342
B((MoO2)2L)=10.0
B((MoO2)2L) is the effective constant at pH 2.05.
****
C20H11NO9S2 H3L CAS 66451-74-9 (8983)
6-Hydroxy-5-oxo-5H-dibenzo[a,j]phenoxazine-9,11-disulfonic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp NaClO4 25°C 0.10M C 1977SLb (99539) 343
B((MoO2)2L)=9.9
B((MoO2)2L) is the effective constant at pH 2.05.
****
C20H13N3O7S H3L EriochromeBla A CAS 16279-54-2 (5299)
3-Hydroxy-4-(2-hydroxy-1-alpha-naphthylazo)-7-nitronaphthalene-1-sulfonic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp NaNO3 25°C 2.0M U 1971AAc (99584) 344
K(MoO2+HL)=9.80
****
C20H22N2O8 H5L Azotochelin CAS 23369-85-9 (6112)
N,N'-Bis(2,3-dihydroxybenzoyl)lysine;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl oth/un 25°C 0.10M C K1=ca. 35 1998DHa (99918) 345
K1(eff)=4
Medium: 0.10 M HEPES, pH 6.6.
****
C22H20O13 H5L Carminic acid CAS 1260-17-9 (714)
Carminic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) sp oth/un 22°C ? U 1966KWb (101705) 346
K(MoO4+H5L=MoO3H3L)=3.8(?)
****
C22H24N2O8 L Deoxycycline CAS 564-25-0 (2204)
Deoxycycline, 6-Deoxy-5-hydroxytetracycline;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Mo(VI) gl none 20°C 0.0 C 1991JMa (101766) 347
K(MoO4+H3L=MoO3HL)=7.99

K(MoO4+2H3L=MoO3(H2L)2)=9.21

****

C22H24N2O8 H2L Tetracycline CAS 60-54-8 (2201)
Tetracycline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Mo(VI)	gl	none	20°C	dil	C		K(MoO3+HL)=7.80	1989VJa (101823)	348

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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