SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 35 experiments for
 (no ligands specified)
 Metal : Os
 (no references specified)
 (no experimental details specified)

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	oth/un	?	1.00M	U	H		1968BHc (762)	1
							K=0.89.		
Medium: 1 M KOH. K: OsO6---- + OsO4-- = 2Os(VII)									
Os	EMF	none	25°C	0.0	M			1966BDb (763)	2
							K=14.96, 884.7 mV		
							K'=8.18, 483.6 mV		
K: Os(bpy)3+++ + e = Os(bpy)3++. K': Os(bpY)2(py)Cl++ + e = Os(bpy)2(py)Cl+									
17 similar reactions									
Os	EMF	none	25°C	0.0	U			1956CAa (764)	3
							K=65.3(964 mV)		
K: OsO4(aq)+4H+4e=OsO2(H2O)x(s)+2H2O									
Os	oth	none	25°C	0.0	U			1952LAb (765)	4
							K=10(0.3 V)		
K(HOs(VIII)O5+2e=Os(VI)O4+OH); from thermodynamic data. Estimated values: K(OsO4+8H+8e=Os(s)+4H2O)=114(850 mV), K(Os(IV)Cl6+e)=14(850 mV)									
Os	EMF	oth/un	25°C	2.11M	U	I		1950MCa (766)	5
							K=5.90(349 mV)		
Medium: M HBr; K: Os(IV)Br6+e=Os(V)Br6. In I=4 M: K=5.24(310 mV), I=3.25 M: K=5.43(321 mV), I=2.12: K=5.90(349 mV)									
Os	EMF	oth/un	20°C	0.10M	U	I		1946DHa (767)	6
							K=7.67(446 mV)		
Medium: HCl; K: Os(IV)+e=Os(III). For I=5 M HCl: K=5.28(307 mV); 3.5 M: K=5.80(337 mV); 2 M: 6.66(387 mV). Also in HBr: 1 M: K=6.63(392 mV)									

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CO L Carbon monoxide CAS 630-08-0 (551)
Carbon monoxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	non-aq	25°C	100%	U	T HM		1993PSb (2816)	7
							K(Os3L10H2+L)=2.77		

Medium: Decalin. T. 25-90 C. K=2.63(30C); 2.51(35); 2.41(40); 1.96(60); 1.87 (70); 1.64(80); 1.49(90). At 25-40C, DH=-42.3 kJ mol-1; at 50-90 C, DH=-39.8

Os gl non-aq 25°C 100% U HM 1993PSb (2817) 8
B(Os3L10H2+2L)=ca. 7.70
Medium:Decalin. DH=-79.9 kJ mol-1; DS=-113.0.

Os kin alc/w 25°C 100% U 1983WPa (2818) 9
K(H3Os4(CO)12+H)=12.0
K(HOs3(CO)12+H)=14.7
K(HOs(CO)4+H)=15.2

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N2 L Nitrogen CAS 7727-37-9 (5686)
Dinitrogen, also Nitrous oxide; N2O

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	oth/un	25°C	0.30M	U	M	1971EGa (10024)	10
							K'=3.62		

Medium:(K,H)SO4. K': cis-Ru(NH3)4(H2O)2+Os(NH3)5N2. K'=3.61 by kinetics

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N2H4 L Hydrazine CAS 302-01-2 (2117)
Hydrazine; H2N.NH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	oth/un	25°C	var	U		K1=6.76	1972RKc (10085)	11

Metal: OsO4 (?) Medium: HCl

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OH- HL Hydroxide (57)
Hydroxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	gl	KCl	25°C	1.2M	C		1998ARa (11828)	12
							*K(OsO(H2O)(CN)4)=3		
							*K(OsO(OH)(CN)4)=>-1		

Medium: KCl/KNO3

Os	sp	oth/un	25°C	var	C		1983GZa (11829)	13
							*K(H2OsO2(OH)4)=-8.5	
							*K(HOsO2(OH)2=-10.4	

Metal is Os(VI).

Os	sp	oth/un	25°C	var	C		1983GZa (11830)	14
							*K(OsO4)=-12.2	

Metal is Os(VIII).

Os	sp	NaClO4	10°C	4.00M	U	M	1982BMa (11831)	15
							K(Os(VI)Cl4(OH)2+H)=0.8	

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                                        K(Os(VI)Cl4(H2O)OH+H)=0.3
-------------------------------------------------------------------------------
Os         kin oth/un 20°C 0.10M C                      1978LDa (11832)  16
                                        K(OsO4+OH=HOsO5)=2.48
Metal is Os(VIII). Medium: 0.10 M NaHCO3/Na2CO3.
-------------------------------------------------------------------------------
Os         kin oth/un 35°C  1.0M U                      1977MGa (11833)  17
                                        K(OsO3L3+L)=1.50
-------------------------------------------------------------------------------
Os         dis oth/un 24°C       U                      1972LEb (11834)  18
                                        *K1(OsO4+H2O=OsO4OH+H)=-12.5
medium:KOH at various concentrations
-------------------------------------------------------------------------------
Os         gl  oth/un 20°C 0.25M U                      1967BNa (11835)  19
                                        *K1=-7.24
Os as OsO2(OH)4. Medium: 0.25 M Na2SO4. In 'dilute' soln: *K1=-7.2,
*K2=12.2, *K3=-13.95, *K4=K(OsO5OH=OsO56+H)=-14.17
-------------------------------------------------------------------------------
Os         gl  oth/un 25?°C  dil  U                      1966WSa (11836)  20
                                        *K1(Os(en)3)=-5.10
Metal: Os+++
-------------------------------------------------------------------------------
Os         dis none   25°C  0.0  U  I                   1963GOb (11837)  21
                                        Kd(M(aq)=M(CCl4))=1.09
M is OsO4(H2O)n; data also for 1 M-NaClO4 (Kd=1.16); no ev polynuclear
complex for <10**-3 M-Os in CCl4
-------------------------------------------------------------------------------
Os         gl  oth/un   ?   var  U                      1955DHa (11838)  22
                                        *K1(Os(en)3) > 0
                                        *K2=-5.8
-------------------------------------------------------------------------------
Os         dis NaClO4 25°C  1.0M U                      1953SSb (11839)  23
                                        *K1(OsO4(H2O)n)=-12.0
                                        *K2=-14.85?
By spectrophotometry *K1=-12.0, *K2=-14.52
-------------------------------------------------------------------------------
Os         dis non-aq 25°C 100%  U                      1938AYa (11840)  24
                                        Kd=1.89(x units)
                                        K=0.80 in CCl4
In CCl4; metal is OsO4(H2O)n; Kd: K(OsO4(aq)=OsO4(CCl4));ev (OsO4)n in CCl4,
K(4OsO4=(OsO4)4?); method:also partial pressure of CCl4
-------------------------------------------------------------------------------
Os         dis oth/un 25°C  dil  U                      1928YWa (11841)  25
                                        *K1(OsO4(H2O)n)=-12.10
                                        Kd=1.09
metal is OsO4(H2O)n; Kd(OsO4(aq)=OsO4(CCl4))
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PO4---                H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	oth/un	25°C	var	U			1973KRb (13282)	26
							K(OsO4+L)=2.4 (?)		

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C2H5NO2 HL Glycine CAS 56-40-6 (85)
2-Aminoethanoic acid; H2N.CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	NaCl	25°C	1.00M	U	T H	K1=1.30	1984MKa (21655)	27

Data at 25-40C. DH = 8 kJ mol-1. Os = OsO4(OH)2

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C3H7NO2 HL Alanine CAS 56-41-7 (86)
2-Aminopropanoic acid; H2N.CH(CH3).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	kin	NaCl	25°C	1.00M	U	T H	K1=0.93	1984MKa (26229)	28

Data at 25-40C. DH = 17 kJ mol-1. Os = OsO4(OH)2

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C5H11NS2 HL CAS 147-84-2 (2126)
Diethyldithiocarbamic acid; (CH3.CH2)2N.CSSH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	non-aq	30°C	100%	U			1993PBa (41358)	29

K(trans-OsL2A2=cis-OsL2A2)=0.78 (for Os(II)) and -3.87 (for Os(III)).

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C9H7N3O2S H2L TAR CAS 2246-46-0 (707)
4-(2'-Thiazolylazo)-resorcinol; C3H2NS.N:N.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	oth/un	?	0.10M	U			1969IBc (64718)	30
							K(?)=8.59		

Metal:Os(IV). For Os(VIII), K(?)=6.49

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C10H11N7S2 L CAS 60435-22-5 (2819)
Phthalimide-dithiosemicarbazone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	none	25°C	0.0	U			1976GPc (71099)	31
							Keff=4.18		

Os(VIII) at pH 4

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C12H8N2O4 H2L CAS 6813-38-3 (5904)
4,4'-Dicarboxy-2,2'-bipyridine;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	none	25°C	0.0	U			1990KNb (80549)	32
							K(OsH2L3=OsL3+2H)=-1.70		

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C14H10N4 L CAS 25005-96-3 (5906)
2,3-Bis(2-pyridyl)pyrazine;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	none	25°C	0.0	U			1990KNb (86913)	33
							K(OsHL3=OsL3+H)=4.60		

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C15H11N3O HL PAN CAS 85-85-8 (572)
1-(2-Pyridylazo)-2-naphthol; C5H4N.N:N.C10H6.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	mixed	?	50%	U		K1=9.34	1969BIc (91235)	34

Os(IV). Medium: 50% DMF, 0.1 M NaClO4). With Os(VIII), K1(?)=8.62

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C15H12N2O3S HL (4070)
2-(3'-Benzoylthioureido)benzoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Os	sp	alc/w	30°C	96%	U			1966MBa (91440)	35
							K(?)=4.38		

Metal: Os(VIII). Medium: 95% EtOH

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EXPLANATORY NOTES

DATA Flags are :-

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

END