

## SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 78 experiments for

(no ligands specified)

2 metals : As(III), As(V)

(no references specified)

(no experimental details specified)

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e- HL Electron (442)

Electron;

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

As(III) EMF none 25°C 0.0 U T 1924SCa (312) 1

K=11.87(234 mV)

K: 0.5As<sub>2</sub>O<sub>3</sub>(s)+3H+3e=As(s)+1.5H<sub>2</sub>O. K=10.70(45 C;225 mV). K(HAsO<sub>2</sub>+3H+3e=As(s)+2H<sub>2</sub>O)=12.55(247.5 mV)

\*\*\*\*\*

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

Chloride;

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

As(III) EMF NaCl 25°C 5.00M U I 1988PEa (4477) 2

B(As(OH)<sub>2</sub>Cl)=-2.34B(As(OH)Cl<sub>2</sub>)=-5.2-----  
As(III) sol none 25°C 0.0 U 1957ARb (4478) 3I=0 corr. K(As(OH)<sub>3</sub>+H+L=As(OH)<sub>2</sub>L+H<sub>2</sub>O)=-1.07, K(As(OH)<sub>2</sub>L+H+L=As(OH)L<sub>2</sub>+H<sub>2</sub>O)=-3.47, K(As(OH)L<sub>2</sub>+H+Cl=AsL<sub>3</sub>+H<sub>2</sub>O)=-4.20. Also K<sub>d</sub> values-----  
As(III) sol oth/un 25°C var U 1940GHa (4479) 4K(0.5As<sub>2</sub>O<sub>3</sub>(s)+3H+3L=AsL<sub>3</sub>+1.5H<sub>2</sub>O)=-10.5

\*\*\*\*\*

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

Fluoride;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----As(III) sp NaClO<sub>4</sub> 22°C 1.00M U 1976IVa (6738) 5K(As(OH)<sub>2</sub>+F)=3.51K(As(OH)<sub>2</sub>+F)=3.52 (solubility)

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MoO<sub>4</sub>-- H<sub>2</sub>L Molybdate (443)

Molybdate;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----As(III) gl NaClO<sub>4</sub> 25°C 3.00M C 1975PEa (8712) 6

B(8,5,2)=60.92  
 B(10,6,2)=75.25  
 B(11,6,2)=80.73  
 B(12,6,2)=84.07

B(p,q,r): pH+qB+rC=HpBqCr; B=MOo4 2-; C=HAsO4-

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OH- HL Hydroxide (57)  
 Hydroxide;

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

As(III) sol oth/un 22°C C TIH 1999PBa (10998) 7  
 Ks(0.5AsO3+H2O=As(OH)3)=-3.08  
 Medium: 0-0.99 mole fraction H2O/HOAc. As2O3 is arsenolite. Data for 60  
 and 90C and H2O/acetone mixtures. K(As(OH)3+4H2O=As(OH)3.4H2O)=0.36  
 -----

As(III) sp NaClO4 22°C 1.00M U 1976IVa (10999) 8  
 K(As(OH)3+H=As(OH)2+H2O)=-1.17  
 \*Ks(As(OH)3(s)+H)=-0.82  
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S-- H2L Sulfide CAS 7783-06-4 (705)  
 Sulfide;

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

As(III) sol oth/un 25°C 0.10M M T H 1992EAa (14307) 9  
 Ks(As2S3(s),H3AsO3)=-11.9  
 Ks(As2S3(s),H2As3S6)=-5.0  
 K(As2S3(s),H3AsO3)=K(.5As2S3(s)+3H2O=H3AsO3+1.5H2S);  
 K(As2S3(s),H2As3S6)=1.5As2S3(s)+1.5H2S=H2As3S6+H); 25-90 C  
 -----

As(III) oth oth/un 25°C 0.0 U 1990SAa (14308) 10  
 Ks(As2S3)=-219.14  
 Ks(As2S2(orpiment))=-180.43  
 Calculated from thermodynamic data. Ks(As2S3): As2S3(s)+20H2O=2HAsO4+3SO4+  
 3OH. Ks(orpiment): As2S2(s)+16H2O=2HAsO4+2SO4+3OH.  
 -----

As(III) sol oth/un 25°C var M T 1990WEa (14309) 11  
 K(As2S3,H3AsO3)=23.11  
 K(As2S3,H2As3S6)=-3.61  
 K(As2S3,H3AsO3)=K(0.5As2S3(s)+3H2O=H3AsO3+1.5HS+1.5H);  
 K(As2S3,H2As3S6)=K(1.5As2S3(s)+1.5HS+0.5H=H2As3S6; Constants at I=0  
 -----

As(III) oth none 25°C dil C T 1989SRf (14310) 12  
 K(HAs3S6+H=H2As3S6)=6.56  
 Critical eval. of lit. data for the solubility of As2S3 in sulfide media.  
 Ks(As2S3+HS=0.67HAs3S6+0.33H)=-2.82; Ks(As2S3+HS+0.33H=0.67H2As3S6)=1.55  
 -----

As(III) gl NaCl 22°C 1.00M U 1977VIa (14311) 13  
 B(As3S6)=-134.40

B(As2S5)=-92.0

-----  
As(III) sol oth/un 0°C var U 1964PCa (14312) 14

K(0.5As2L3(s)+0.5L=HAsL2)=1.0

K(AsL2+H)=3.7

K(0.5As2L3(s)+3H2O=1.5H2S(aq)+As(OH)3)=-12.6; K(0.5As2L3(s)+0.5H2L=HAsL2)=-5.3

-----  
As(III) gl KCl ? 1.0M U 1960ASc (14313) 15

K(3As2L3(s)+3H2L=6H+2As3L6)=-33.19. K(2As2L3(s)+2H2O=3H+As3L6+HAsO2)=-27.43.

K(As2L3(s)+4H2O=2HAsO2+3H2L)=-21.68

-----  
As(III) sol oth/un 20°C var U 1956BLa (14314) 16

K(As2L3+2OH=AsL2+AsL(OH)2)=2.15. K(As2L3(s)+2L=AsL2+AsL3)=12.94

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S04-- H2L Sulfate CAS 7664-93-9 (15)

Sulfate;

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

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As(III) con mixed 25°C ? U 1963GRc (15998) 17

K(AsO+HL)=1.08

Medium: H2SO4. Also by freezing point

-----  
As(III) con mixed 25°C ? U 1961BGa (15999) 18

K(As(HL)4+H)=2.8

Medium: H2SO4

\*\*\*\*\*

CH40 L Methyl alcohol CAS 67-56-1 (597)

Methanol; CH3.OH

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

-----  
As(III) EMF alc/w 20°C 100% U 1971GSa (17875) 19

K(As+2L=As(L')2+2H) > 1

K(As(L')2+L')=14.20

K(2As(L')3+L'=As2(L')7)=4.74

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

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C2H6O2 L Ethyleneglycol CAS 107-21-1 (924)

1,2-Dihydroxyethane (Ethane-1,2-diol); HO.CH2.CH2.OH

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

-----  
As(III) gl oth/un 25°C 0.10M U 1957RLa (22134) 20

K(As(OH)4+L)=-1.15

\*\*\*\*\*

C3H8O2 L Propyleneglycol CAS 57-55-6 (2025)

Propan-1,2-diol; CH3.CH(OH).CH2(OH)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (27666)	21
K(As(OH)4+L)=-1.00										
*****										
C3H8O3		L		Glycerol				CAS 56-81-5	(2707)	
Propane-1,2,3-triol; HO.CH2.CH(OH).CH2.OH										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (27716)	22
K(As(OH)4+L)=0.06										
*****										
C4H6O6		H2L		L-Tartaric acid				CAS 87-69-4	(92)	
L-Tartaric acid, L-2,3-Dihydroxybutanedioic acid; HOOCH(OH).CH(OH).COOH										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	vlt	KCl	25°C	0.10M	U				1980ETa (31195)	23
K(As(OH)2+L)=6.62										
*****										
C4H10O2		L						CAS 5341-95-7	(3575)	
meso-Butan-2,3-diol; CH3.CH(OH).CH(OH).CH3										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (34668)	24
K(As(OH)4+L=As(OH)2H-2L)=-0.89										
DL- or meso- not stated										
*****										
C4H10O3		L						CAS 623-39-2	(3577)	
3-Methoxypropan-1,2-diol; CH2(OH).CH(OH).CH2.OCH3										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (34705)	25
K(As(OH)4+L=As(OH)2H-2L)=-0.18										
*****										
C5H10O4		L		Deoxy-Ribose				CAS 533-67-5	(7470)	
2-Deoxy-D-ribose, 2-Deoxy-D-erythro-pentose;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	U				1979HUa (40325)	26
K(H2AsO3+L)=2.89										
*****										
C5H10O5		L		D-Arabinose				CAS 10323-20-3	(3606)	
D-Arabinose;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo

-----  
As(III) gl KCl 25°C 0.10M U 1960ATa (40332) 27  
K(As(OH)4+2L=As(H-2L)2)=1.28

\*\*\*\*\*  
C5H10O5 L D-Xylose CAS 58-86-6 (3607)  
D-Xylose;

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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As(III) gl KCl 25°C 0.10M U 1959ATa (40360) 28  
K(As(OH)4+2L=As(H-2L)2)=0.74

\*\*\*\*\*  
C5H10O5 L L-Arabinose CAS 5328-37-0 (1616)  
L-Arabinose

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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As(III) gl KCl 25°C 0.10M U 1960ATa (40365) 29  
K(As(OH)4+2L=As(H-2L)2)=1.24

-----  
As(III) gl oth/un 25°C 0.10M U 1957RLa (40366) 30  
K(AsO(OH)2+H2L=AsOL)=0.20

\*\*\*\*\*  
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  
-----

As(III) sp non-aq ? 100% U M 1968SRg (41346) 31  
K(AsAL+2HL=AsL3+H2A)=7.93

Medium: CCl4. H2A=dithizone.

\*\*\*\*\*  
C5H12O4 H2L Pentaerythritol CAS 115-77-5 (3028)  
Pentaerythritol; C(CH2.OH)4

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

As(III) gl KCl 25°C 0.10M U 1960ARa (41659) 32  
K(As(OH)4+L=As(H-2L)2)=0.94

-----  
As(III) gl oth/un 25°C 0.10M U 1957RLa (41660) 33  
K(As(OH)4+L=As(H-2L)2)=0.00

\*\*\*\*\*  
C6H3N3O7 HL Picric acid CAS 88-89-1 (593)  
2,4,6-Trinitrophenol; HO.C6H2(NO2)3

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

As(III) sol alc/w 25°C 50% C I K1=1.44 1983BWb (42092) 34  
Kso((C6H5)4AsL)=-5.94

Method: spectrophotometry. Data for 20-100% MeOH/H2O

Cation is tetraphenylarsonium.

\*\*\*\*\*

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
As(III)	gl	KCl	25°C	0.10M	U				1959ARa (43724)	35
								K(As(OH)4+H2L=As(OH)2L)=2.24		
								K(As(OH)4+2H2L=AsL2)=2.71		

As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (43725)	36
								K(AsO(OH)2+H2L=AsOL)=2.04		

\*\*\*\*\*

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
As(III)	gl	KCl	25°C	0.10M	U				1959ARa (43948)	37
								K(As(OH)4+H3L=As(OH)2HL)=2.81		
								K(As(OH)4+2H3L=As(HL)2)=3.09		

\*\*\*\*\*

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
As(III)	gl	KCl	25°C	var	U	I			1964ATa (44405)	38
								K(H3AsO3+2H2L=AsL2+H)=-8.186+9.162SQRTI/(1+0.553SQRTI)=-1.61I		

\*\*\*\*\*

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
As(III)	vlt	oth/un	25°C	0.10M	U				1972ETa (45625)	39
								K(H+L+As(OH)2)=18.84		

Medium: Na2SO4

\*\*\*\*\*

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
As(III)	vlt	oth/un	25°C	0.10M	U				1973ETa (46702)	40
								K(As(OH)2+H+L)=15.58		

Medium: Na2SO4. Using a glass electrode, K=15.33

\*\*\*\*\*

C6H10O7	HL	Glucuronic acid	CAS 6556-12-3	(599)
D-Glucuronic acid;				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M			K1=2.46 B2=2.79	1987PLb (48417)	41

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
As(III)	gl	KCl	25°C	0.10M	U			1960ATa (49505) $K(As(OH)_4 + 2L = As(H-2L)) = 0.68$		42

C6H12O6	L	D-Fructose	CAS 57-48-7	(1561)
D-Fructose				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	45°C	0.10M	U T H			K(As(OH)4+L=As(OH)2H-2L)=0.703 K=0.779(15 C), 0.739(25 C), 0.724(35 C). DH=-4.3 kJ mol <sup>-1</sup> , DS=0	1968Apd (49535)	43

As(III)      gl    KCl      25°C 0.10M U      1960Ata (49536)    44  
 $K(As(OH)_4 + 2L = As(H-2L)_2) = 1.08$

As(III)	gl	oth/un	25°C	?	U	1957RLa (49537)	45
$K(\text{AsO}(\text{OH})_2 + \text{H}_2\text{L} = \text{AsOL}) = 0.77$							

C6H12O6	L	D-Galactose	CAS 59-23-4	(1559)
D-Galactose				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U			K(AsO(OH)2+H2L=AsOL)=0.29	1957RLa (49557)	46

C6H12O6	L	D-Glucose	CAS 492-62-6	(1560)
D-Glucose				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U		K(AsO(OH)2+H2L=AsOL)=0.16	1957RLa (49575)	47

C6H12O6	L	D-Mannose	CAS 3458-28-4	(1562)
D-Mannose				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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As(III)    gl  KCl    25°C 0.10M U                      1959ARa (49598)  48
                                         K(As(OH)4+L=As(OH)2H-2L)=2.22
                                         K(As(OH)4+2L=As(H-2L)2)=2.97
-----
As(III)    gl  oth/un 25°C 0.10M U                      1957RLa (49599)  49
                                         K(AsO(OH)2+H2L=AsOL)=0.36
*****
C6H12O6          L    Sorbose          CAS 87-79-6 (930)
L(-)-Sorbose;
-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
As(III)    gl  KCl    25°C 0.10M U                      1960ATa (49611)  50
                                         K(As(OH)4+2L=As(H-2L)2)=1.08
*****
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
-----
As(III)    gl  KCl    25°C 0.10M M                      K1=1.60   B2=2.29   1987PLb (49698)  51
*****
C6H14O6          L    D-Mannitol    CAS 69-65-8 (3664)
D-Mannitol;
-----
Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
As(III)    gl  KNO3   20°C 0.10M M                      1980MBc (51067)  52
                                         K(As(OH)3+H2L=As(OH)L)=0.20
K'(As(OH)3+H2L=As(OH)2L+H)=-8.20. For L=D-sorbitol, K=0.46, K'=-7.96;
L=D-dulcitol, K=0.30, K'=-8.30; L=D-glucose, K=-0.96, K'=-9.21.
-----
As(III)    oth KCl    25°C 0.10M U                      1970ATb (51068)  53
                                         K(As(OH)4+L=As(OH)2H-2L)=1.07
Method: optical rotary dispersion
K(As(OH)2H-2L+H=As(OH)2H-1L)=8.44, K(AsH(OH)4+L=As(OH)2H-1L)=0.38
-----
As(III)    gl  KCl    25°C 0.10M U                      1959ARa (51069)  54
                                         K(As(OH)4+L=As(OH)2H-2L)=0.85
*****
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
-----
As(III)    gl  KCl    25°C 0.10M U                      1968AOa (54353)  55
                                         K(As(OH)4+H2L)=2.96
*****
C7H10N2          L          CAS 1122-58-3 (492)

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4-(N,N-Dimethylamino)pyridine; C<sub>5</sub>H<sub>4</sub>N.N(CH<sub>3</sub>)<sub>2</sub>

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)		nmr non-aq	25°C	100%	U		K <sub>1</sub> =3.33	1992PWb (56629)	56
Medium: CDCl <sub>3</sub> ; metal salt:EtN(CH <sub>2</sub> ) <sub>2</sub> NEtAs+CF <sub>3</sub> SO <sub>3</sub> <sup>-</sup> ; other data for adducts with other arsenium cations and Lewis bases.									
*****									
C <sub>8</sub> H <sub>10</sub> O <sub>2</sub>		L					CAS 7138-28-5	(3199)	
Phenylethane-1,2-diol; C <sub>6</sub> H <sub>5</sub> .CH(OH).CH <sub>2</sub> .OH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U			1957RLa (60834)	57
							K(AsO(OH) <sub>2</sub> +H <sub>2</sub> L)=-0.64		
*****									
C <sub>10</sub> H <sub>16</sub> N <sub>2</sub> O <sub>8</sub>		H <sub>4</sub> L		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
As(III)	vlt	oth/un	20°C	0.10M	U			1972EVa (73593)	58
							K(As(OH) <sub>2</sub> +H+L)=19.3		
-----									
As(III)	EMF	oth/un	24°C	0.10M	U			1972EVa (73594)	59
							K(As(OH) <sub>2</sub> +H+L)=19.6		
Medium: 0.1 M Na <sub>2</sub> SO <sub>4</sub>									
*****									
C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>		L		Turanose			CAS 547-25-1	(2701)	
3-O-D-Glucopyranosyl-D-fructose;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M		K <sub>1</sub> =0.80	1987PLb (82864)	60
*****									
C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>		L		alpha-Lactose			CAS 5989-81-1	(2486)	
4-D-Beta-D-Galactopyranosyl-alpha-D-glucose;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M		K <sub>1</sub> =0.64	1987PLb (82870)	61
*****									
C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>		L		Maltose			CAS 6363-53-7	(2705)	
4-O-alpha-D-Glucopyranosyl-D-glucose, Maltobiose;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M		K <sub>1</sub> =0.40	1987PLb (82877)	62
*****									
C <sub>12</sub> H <sub>22</sub> O <sub>11</sub>		L		Cellobiose			CAS 528-50-7	(2697)	

4-O-beta-D-Glucopyranosyl-D-glucose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M			K1=0.41	1987PLb (82884)	63
*****										
C12H22O11		L		Melibiose				CAS 66009-10-7	(2699)	
6-O-D-Galactopyranose-D-glucose;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M			K1=0.82	1987PLb (82888)	64
*****										
C12H24O11		L		Maltitol				CAS 585-88-6	(2709)	
4-O-alpha-D-Glucopyranosyl-D-glucitol;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	KCl	25°C	0.10M	M			K1=1.5	1988HLA (83681)	65
*****										
C12H27O4P		L						CAS 126-73-8	(2432)	
Tri-n-butyl phosphate; (C4H9O)3PO										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	sp	oth/un	?	?	U	M			1973RGa (84118)	66
*****										
C14H22N2O8		H4L		CDTA				CAS 482-54-2	(200)	
trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraethanoic acid;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	vlt	KCl	25°C	0.10M	U				1980ETa (88586)	67
*****										
Polymer								K(As(OH)2+H+L)=20.67	(4200)	
Polyvinyl alcohol;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(III)	gl	oth/un	25°C	0.10M	U				1957RLa (108380)	68
*****										
See reference for definitions								K(As(OH)4+L=As(OH)2H-2L)=-0.15		
e-		HL		Electron				(442)		
Electron;										

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

As(V) oth none 25°C 0.0 U 1952LAB (313) 69

K=18.9(559 mV)

K:  $\text{H}_3\text{AsO}_4 + 2\text{H} + 2\text{e} = \text{HAsO}_2 + 2\text{H}_2\text{O}$ . From thermodynamic data.  $K(\text{AsO}_4 + 2\text{H}_2\text{O} + 2\text{e} = \text{AsO}_2 + 4\text{OH}) = -22.9(-670 \text{ mV})$ .  $K(\text{As(s)} + 3\text{H} + 3\text{e} = \text{AsH}_3(\text{g})) = -30.8(-600 \text{ mV})$

\*\*\*\*\*

ClO4- HL Perchlorate CAS 7001-90-3 (287)

Perchlorate;

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

As(V) cal oth/un 25°C dil U H 1972CJa (6147) 70

Kso(Ph4AsL(s)=Ph4As+L)=-8

DH(Kso)=45.6 kJ mol<sup>-1</sup>, DS(Kso)=0. Kso=-8.4 to -7.9

\*\*\*\*\*

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

Fluoride;

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

As(V) kin oth/un 65°C 9.0M U 1969LJb (6739) 71

K(HAsF6+H2O=HAsF5OH+HF)=-0.9

medium:9-15 M H2SO4

-----  
As(V) EMF KCl ? 1.0M U 1961DGa (6740) 72

K(H3AsO4+HF=AsO3F+2H+H2O)=-6.2

K(H2AsO4+F=AsO3F+H2O)=-0.75

\*\*\*\*\*

MoO4-- H2L Molybdate (443)

Molybdate;

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

As(V) gl NaClO4 25°C 0.63M U 1987BKb (8713) 73

K(14H+AsO4+9MoO4=H3AsMo9O34)=100.43; K(15H+AsO4+9MoO4=H4AsMo9O34)=103.43

K(11H+2AsO4+6MoO4=HAs2Mo6O26)=79.65. Other data also given.

-----  
As(V) ISE NaCl ? 2.00M U 1973COa (8714) 74

K'=69.7

K(H+As2Mo6O26(6-))=ca.5.9

K(H+HAs2Mo6O26(5-))=2.6

K': 2HAsO4-- + 6L + 10H=As2Mo6O26(6-) + 6H2O. In 1 M LiCl at 3 C:

K(H+A)=5; K(H+HA)=3.9; K(H+H2A)=2.9; K(H+H3A)=1.9 where A=As4Mo12O50(8-)

\*\*\*\*\*

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  
-----

As(V) gl KNO3 20°C 0.10M U 1977VBb (43726) 75

K(H2AsO4+2H2L=As(OH)2L2)=0.81

$$K(H_2AsO_4 + 3H_2L = AsL_3) = 0.94$$

\*\*\*\*\*

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
As(V)	sp	oth/un	23°C	96%	U				1981BMe (43949)	76
Medium: 96% H2SO4										

As(V)	gl	KN03	20°C	0.10M	U				1977VBb (43950)	77
									$K(H_2AsO_4 + 2H_2L = As(OH)_2L_2) = 1.02$	
									$K(H_2AsO_4 + 3H_2L = AsL_3) = 1.45$	

\*\*\*\*\*

C6H14O6                      L      D-Mannitol                      CAS 69-65-8    (3664)  
D-Mannitol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
As(V)	gl	KN03	20°C	0.10M	M				1980MBc (51070)	78
									$K(H_2AsO_4 + 3H_2L = AsL_3) = 1.08$	
For L=D-sorbitol, K=1.90; L=D-dulcitol, K=1.0; L=D-adonitol, K=-0.52.										

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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

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END