

## SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 19 experiments for  
(no ligands specified)

Metal : Cl

(no references specified)

(no experimental details specified)

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e- HL Electron (442)  
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Cl	oth	none	25°C	0.0	U			1972C0a	(401)	1
K(1/2Cl <sub>2</sub> (g)+e=Cl)=22.21(1.31V)										

Method:Estimated data

Cl	oth	non-aq	25°C	100%	U	I		1972C0a	(402)	2
K(0.5Cl <sub>2</sub> +e=Cl)=24.27(1.436V)										

Method:Estimated data. MeOH. K=23.18(1.37V, EtOH), 22.43(1.327V, BuOH), 22.08(1.306V, PentOH), 21.70(1.284V, acetone), 15.10(MeCN), 21.70(HCOOH)

Cl	oth	non-aq	400°C	100%	U	T		1971BJc	(403)	3
K(1/2Cl <sub>2</sub> (g)+e=Cl)=7.63(1.019V)										

Method:Estimated data. Medium: fused (Li,K)Cl. K=6.87(0.986V, 450 C), 5.63(0.920V, 550 C)

Cl	oth	none	25°C	0.00	U			1970JSa	(404)	4
K=41.6(1.23V)										

K=ClO<sub>4</sub><sup>-</sup> + 2H<sup>+</sup> + 2e=ClO<sub>3</sub><sup>-</sup> + H<sub>2</sub>O. Method:combination of thermodynamic data

Cl	EMF	none	25°C	0.00	U	T		1969CLb	(405)	5
K=22.960(1358.27mV)										

K=1/2Cl<sub>2</sub>(g) + e=Cl<sup>-</sup>. K=21.552(1339.10mV, 40 C), 19.841(1311.54mV, 60 C), 17.393(1218.72mV, 80 C)

Cl	EMF	none	25°C	0.00	U	T		1968CLa	(406)	6
K=22.964(1358.52mV)										

K=1/2Cl<sub>2</sub>(g) + e=Cl<sup>-</sup>. K=22.481(1352.24mV, 30 C), 21.553(1339.19mV, 40 C), 20.677(1325.74mV, 50 C), 19.840(1311.44mV, 60 C), 18.289(1281.53mV, 80 C)

Cl	EMF	NaClO <sub>4</sub>	25°C	3.0M	U	I		1967KRb	(407)	7
K(0.5Cl <sub>2</sub> (g)+e=Cl)=22.671										

I=2.0: K=22.957, 1358 mV; I=1.0: K=23.158, 1369.9 mV

Cl	oth	none	25°C	0.0	U			1952LAb	(408)	8
K=40.2(1190 mV)										

K: Cl(VII)O<sub>4</sub>+2H<sup>+</sup>+2e=Cl(V)O<sub>3</sub>+H<sub>2</sub>O. From thermodynamic data. K(Cl(V)O<sub>2</sub>+H<sub>2</sub>O+2e=Cl(III)O<sub>2</sub>+2OH)=11.1(330 mV). Cl(III)O<sub>2</sub>+H<sub>2</sub>O+2e=Cl(I)O+H<sub>2</sub>O=55.6(1640 mV)

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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  
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Cl sp oth/un 25°C 1.00M U 1994Wka (4602) 9  
K(Cl<sub>2</sub>+Cl)=-0.74  
K(BrCl+Cl)=0.78  
K(Br<sub>2</sub>+Cl)=0.11

Medium: HCl

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Cl oth non-aq 0°C 100% U I 1973Gma (4603) 10  
K(Cl<sub>2</sub>+Cl)=2.03

Medium: CH<sub>3</sub>CN, I M LiClO<sub>4</sub>(I=0.0095). K=1.72(I=0.0388); K=1.58(I=0.0498);  
1.36(I=0.0755); 1.15(I=0.1268); 0.85(I=0.3645).Method:chem. anal. and p(Cl<sub>2</sub>)

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Cl EMF non-aq 127°C 100% U 1971BTa (4604) 11  
K(Cl<sub>2</sub>+Cl)=2.5

Medium: dimethylsulfone, 1 M LiClO<sub>4</sub>

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Cl oth NaClO<sub>4</sub> 25°C 4.0M U T 1971SHc (4605) 12  
K(Cl<sub>2</sub>+Cl)=-0.62

Medium: HClO<sub>4</sub>; K<sub>1</sub>=-0.47(-4 C), -0.49(0 C). Method:chemical analysis

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Cl sp non-aq 30°C 100% U 1970DBa (4606) 13  
K(Cl<sub>2</sub>+Cl)=4.11

Medium: sulfolane, 0 corr. Emf also used

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Cl sol oth/un 90°C var U T 1968HIa (4607) 14  
Kp<sub>0</sub>=-1.88  
Kp<sub>1</sub>=-2.86

With Cl<sub>2</sub>. Medium:HCl var. Kp<sub>0</sub>=-1.31(30 C), -1.46(40 C), -1.57(50 C), 1.75(70 C)  
Kp<sub>1</sub>=-2.18(30 C), -2.29(40 C), -2.44(50 C), -2.66(70 C)

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Cl sol oth/un 25°C var U 1931SIa (4608) 15  
K(Cl<sub>2</sub>(g)=Cl<sub>2</sub>(aq))=-1.23  
K(Cl<sub>2</sub>(g)+Cl=Cl<sub>3</sub>)=-2.0  
K(Cl<sub>2</sub>+Cl)=-0.75

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ClO<sub>2</sub>- HL Chlorite CAS 13898-47-0 (6143)  
Chlorite;

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Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
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Cl sp oth/un 25°C dil U 1968HRc (6008) 16  
K(ClO<sub>2</sub>+L)=0.20

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CrO<sub>4</sub>-- H<sub>2</sub>L Chromate CAS 7738-94-5 (2382)  
Chromate;

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Cl         kin NaClO4 26°C 2.00M U T                      1971RKa (6480) 17
                                     K'=1.51
38 C: K'=1.37. K': Cl+2H+HCrO4=HCrO3Cl+H2O. DH=-20.8 kJ mol-1
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H2O                L      Water                      CAS 7732-18-5 (6115)
Water
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Cl         sol non-aq 25°C 100% U          K1=0.95 B2=1.3 1967CKa (7587) 18
Medium:MeCN. Ligand Cl-. K(L+ClO4)=-0.15; K(L+IO4)=0.0
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SO2                L      Sulfur dioxide          (6336)
Sulfur dioxide;
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Cl         sp non-aq 25°C 100% U T H      K1=2.56      1971WNb (15353) 19
Medium: MeCN. DH(K1)=-9.7 kJ mol-1, DS=16.3 J K-1 mol-1
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#### REFERENCES

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#### EXPLANATORY NOTES

DATA Flags are :-

T Data at other TEMPERATURES

I Data with various BACKGROUNDS  
H Data for THERMOCHEMICAL quantities

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END