

Formation Constants of Complex Ions at 25 °C

Complex Ion Equilibrium	K_f
Halide complexes	
$[\text{AlF}_6]^{3-}$	2.5×10^4
$[\text{AlF}_4]^{1-}$	2.0×10^8
$[\text{BeF}_4]^{2-}$	1.3×10^{13}
$[\text{SnF}_6]^{2-}$	1×10^{25}
$[\text{CuCl}_2]^{1-}$	3×10^5
$[\text{AgCl}_2]^{1-}$	1.8×10^5
$[\text{PbCl}_4]^{2-}$	2.5×10^{15}
$[\text{HgCl}_4]^{2-}$	5.0×10^{15}
$[\text{CuBr}_2]^{1-}$	8.0×10^5
$[\text{AgBr}_2]^{1-}$	1×10^{11}
$[\text{HgBr}_4]^{2-}$	3×10^4
$[\text{CuI}_2]^{1-}$	8×10^8
$[\text{AgI}_2]^{1-}$	1×10^{11}
$[\text{PbI}_4]^{2-}$	3×10^4
$[\text{HgI}_4]^{2-}$	1.9×10^{30}
Ammonia complexes	
$[\text{Ag}(\text{NH}_3)_2]^{1+}$	1.6×10^7
$[\text{Zn}(\text{NH}_3)_4]^{2+}$	7.8×10^8
$[\text{Cu}(\text{NH}_3)_4]^{2+}$	1.1×10^{13}
$[\text{Hg}(\text{NH}_3)_4]^{2+}$	1.8×10^{19}
$[\text{Co}(\text{NH}_3)_6]^{2+}$	5.0×10^4
$[\text{Co}(\text{NH}_3)_6]^{3+}$	4.6×10^{33}
$[\text{Cd}(\text{NH}_3)_6]^{2+}$	2.6×10^5
$[\text{Cd}(\text{NH}_3)_4]^{2+}$	1.0×10^7
$[\text{Ni}(\text{NH}_3)_6]^{2+}$	2×10^8
Cyanide complexes	
$[\text{Fe}(\text{CN})_6]^{4-}$	1.0×10^{35}
$[\text{Fe}(\text{CN})_6]^{3-}$	9.1×10^{41}
$[\text{Ag}(\text{CN})_2]^{1-}$	5.3×10^{18}
$[\text{Cu}(\text{CN})_2]^{1-}$	1.0×10^{16}
$[\text{Cd}(\text{CN})_4]^{2-}$	7.7×10^{16}
$[\text{Au}(\text{CN})_2]^{1-}$	2×10^{38}
$[\text{Ni}(\text{CN})_4]^{2-}$	1×10^{31}
Complexes with other monodentate ligands	
$[\text{Ag}(\text{CH}_3\text{NH}_2)_2]^{1+}$	7.8×10^6
$[\text{Ag}(\text{S}_2\text{O}_3)_2]^{3-}$	2.9×10^{13}
$[\text{Cd}(\text{SCN})_4]^{2-}$	1×10^3
$[\text{Cu}(\text{SCN})_2]$	5.6×10^3
$[\text{Fe}(\text{SCN})_3]$	2×10^6
$[\text{Hg}(\text{SCN})_4]^{2-}$	5.0×10^{21}
$[\text{Cu}(\text{OH})_4]^{2-}$	1.3×10^{16}
$[\text{Zn}(\text{OH})_4]^{2-}$	2.8×10^{15}
Complexes with bidentate ligands (en = ethylenediamine)	
$[\text{Mn}(\text{en})_3]^{2+}$	6.5×10^5
$[\text{Fe}(\text{en})_3]^{2+}$	5.2×10^9
$[\text{Co}(\text{en})_3]^{2+}$	1.3×10^{14}
$[\text{Co}(\text{en})_3]^{3+}$	4.8×10^{48}
$[\text{Ni}(\text{en})_3]^{2+}$	4.1×10^{17}
$[\text{Cu}(\text{en})_2]^{2+}$	3.5×10^{19}
$[\text{Co}(\text{C}_2\text{O}_4)_3]^{4-}$	4.5×10^6
$[\text{Fe}(\text{C}_2\text{O}_4)_3]^{3-}$	3.3×10^{20}