

Formation Constants of Complex Ions at 25°C

Complex Ion	K_f
Halide complexes	
[AlF ₆] ³⁻	2.5 x 10 ⁴
[AlF ₄] ¹⁻	2.0 x 10 ⁸
[BeF ₄] ²⁻	1.3 x 10 ¹³
[SnF ₆] ²⁻	1 x 10 ²⁵
[CuCl ₂] ¹⁻	3 x 10 ⁵
[AgCl ₂] ¹⁻	1.8 x 10 ⁵
[PbCl ₄] ²⁻	2.5 x 10 ¹⁵
[ZnCl ₄] ²⁻	1.6 x 10 ¹⁸
[HgCl ₄] ²⁻	5.0 x 10 ¹⁵
[CuBr ₂] ¹⁻	8.0 x 10 ⁵
[AgBr ₂] ¹⁻	1 x 10 ¹¹
[HgBr ₄] ²⁻	3 x 10 ⁴
[CuI ₂] ¹⁻	8 x 10 ⁸
[AgI ₂] ¹⁻	1 x 10 ¹¹
[PbI ₄] ²⁻	3 x 10 ⁴
[HgI ₄] ²⁻	1.9 x 10 ³⁰
Ammonia complexes	
[Ag(NH ₃) ₂] ⁺	1.6 x 10 ⁷
[Zn(NH ₃) ₄] ²⁺	7.8 x 10 ⁸
[Cu(NH ₃) ₄] ²⁺	1.1 x 10 ¹³
[Hg(NH ₃) ₄] ²⁺	1.8 x 10 ¹⁹
[Co(NH ₃) ₆] ²⁺	5.0 x 10 ⁴
[Co(NH ₃) ₆] ³⁺	4.6 x 10 ³³
[Cd(NH ₃) ₆] ²⁺	2.6 x 10 ⁵
[Ni(NH ₃) ₆] ²⁺	2 x 10 ⁸
Cyanide complexes	
[Fe(CN) ₆] ⁴⁻	1.0 x 10 ²⁴
[Fe(CN) ₆] ³⁻	1.0 x 10 ³¹
[Ag(CN) ₂] ¹⁻	5.3 x 10 ¹⁸
[Cu(CN) ₂] ¹⁻	1.0 x 10 ¹⁶
[Cd(CN) ₄] ²⁻	7.7 x 10 ¹⁶
[Au(CN) ₂] ¹⁻	2 x 10 ³⁸
Complexes with other monodentate ligands	
[Ag(CH ₃ NH ₂) ₂] ⁺¹	7.8 x 10 ⁶
[Cd(SCN) ₄] ²⁻	1 x 10 ³
[Cu(SCN) ₂]	5.6 x 10 ³
[Fe(SCN) ₃]	2 x 10 ⁶
[Hg(SCN) ₄] ²⁻	5.0 x 10 ²¹
[Cu(OH) ₄] ²⁻	1.3 x 10 ¹⁶
[Zn(OH) ₄] ²⁻	2 x 10 ²⁰
Complexes with bidentate ligands (en = ethylenediamine)	
[Mn(en) ₃] ²⁺	6.5 x 10 ⁵
[Fe(en) ₃] ²⁺	5.2 x 10 ⁹
[Co(en) ₃] ²⁺	1.3 x 10 ¹⁴
[Co(en) ₃] ³⁺	4.8 x 10 ⁴⁸
[Ni(en) ₃] ²⁺	4.1 x 10 ¹⁷
[Cu(en) ₂] ²⁺	3.5 x 10 ¹⁹
[Co(C ₂ O ₄) ₃] ⁴⁻	4.5 x 10 ⁶
[Fe(C ₂ O ₄) ₃] ³⁻	3.3 x 10 ²⁰