



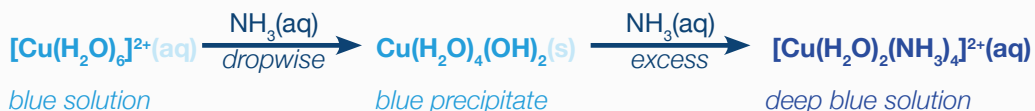
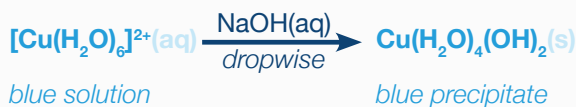
Inorganic Revision Sheet

Metal Aqua Ion Reactions for CIE

Cu²⁺ and Co²⁺

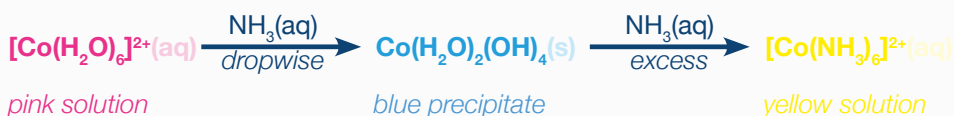
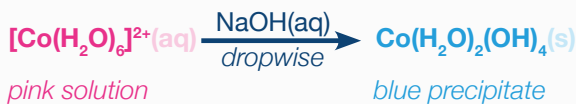
Copper (II), Cu²⁺

dropwise NaOH or NH₃ = blue ppt
excess NaOH = no change
excess NH₃ = deep blue solution



Cobalt (II), Co²⁺

dropwise NaOH or NH₃ = blue ppt
excess NaOH = no change
excess NH₃ = yellow solution



Ligand Exchange

Copper (II), Cu²⁺



Cobalt (II), Co²⁺

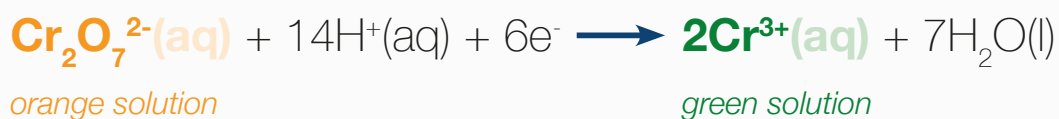




Inorganic Revision Sheet

Metal Aqua Ion Reactions for CIE

Redox Reactions (half equations)



Shapes of complexes

Complex Ion	Shape
$[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$	Octahedral
$\text{Cu}(\text{H}_2\text{O})_4(\text{OH})_2$	Octahedral
$[\text{Cu}(\text{H}_2\text{O})_2(\text{NH}_3)_4]^{2+}$	Octahedral
$[\text{Cu}(\text{Cl})_4]^{2-}$	Tetrahedral
$[\text{Co}(\text{H}_2\text{O})_6]^{2+}$	Octahedral
$\text{Co}(\text{H}_2\text{O})_2(\text{OH})_4$	Octahedral
$[\text{Co}(\text{Cl})_4]^{2-}$	Tetrahedral