



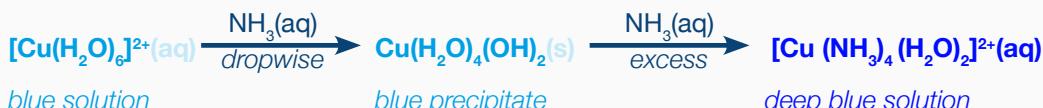
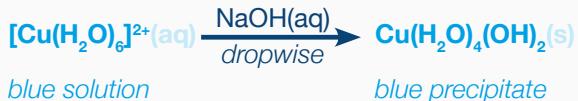
Inorganic Revision Sheet

Metal Aqua Ion Reactions for CIE

Cu²⁺ and Co²⁺

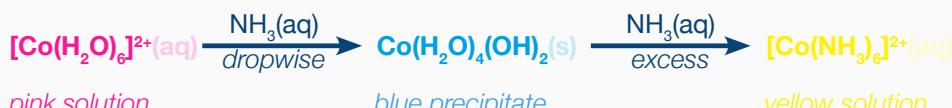
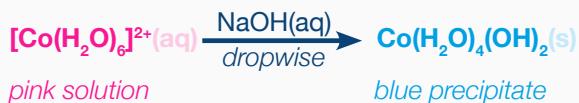
Copper (II), Cu²⁺

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)



purple solution

green solution



green solution

purple solution



deep purple solution

pale pink solution



orange solution

green solution

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