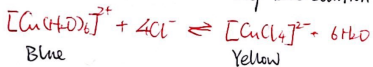
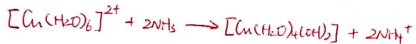
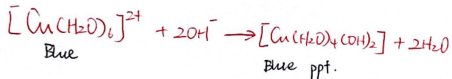


Cu



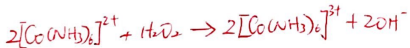
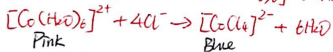
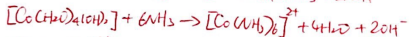
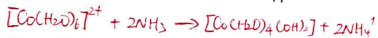
Acid & Base Reaction. Reversible.

Amphoteric Behaviour.

A and B

Change in Coordination Number
From blue to green then yellow

Co

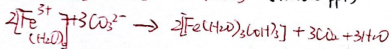
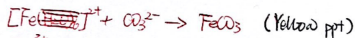
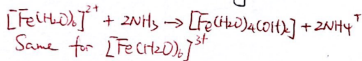
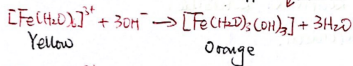
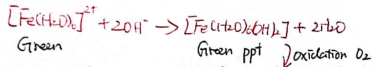


A and B

Precipitate will redissolve in excessive ammonia.

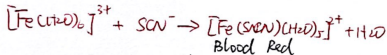
Gradually change from pink to blue. Ligand Exchange
Oxidation. Solution becomes dark red.

Fe

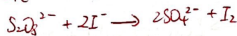
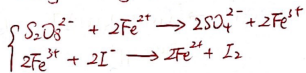
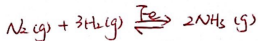
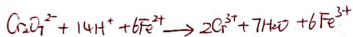
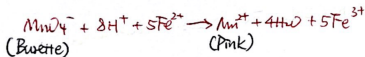


Fe^{3+} is slightly more acidic than Fe^{2+}

$[\text{Fe}(\text{H}_2\text{O})_6]^{3+}$ can lose 3 H^+ , and then becomes ppt, while $[\text{Fe}(\text{H}_2\text{O})_6]^{2+}$ 2 H^+ .

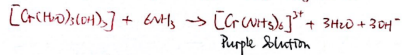
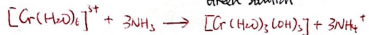
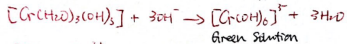
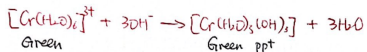


Test for Fe^{3+} .

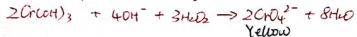


Fe has 2 oxidation states. Positive ions facilitate the collision between 2 negative ions.

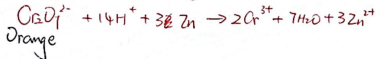
Cr



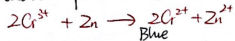
Oxidation from +3 to +6



Reduction from +6 to +3



Reduction from +3 to +2

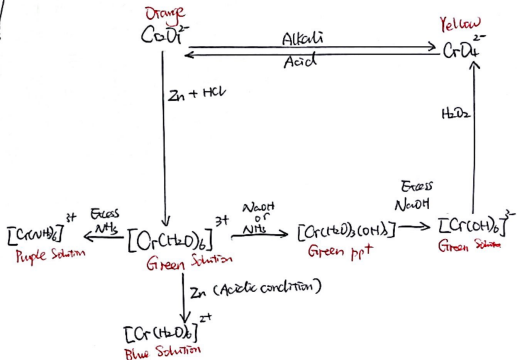


Equilibrium between $\text{Cr}_2\text{O}_7^{2-}$ and CrO_4^{2-}



Not redox. Acid and Base.

Acid and Base



V

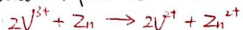
Reduction from +5 to +4



Reduction from +4 to +3



Reduction from +3 to +2



Reduction from +2 to 0.

Zn is not powerful enough to reduce V^{2+} to V.

+5	VO_2^+	Purple
+4	VO^{2+}	Green
+3	V^{3+}	Blue
+2	V^{2+}	Yellow

Catalyst.

