



TRINITY COLLEGE FOR WOMEN NAMAKKAL

Department of Chemistry

Application of co-ordination complexes



Prepared and done by

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AP/Chemistry*

*Medicine, drugs
&
pharmaceutical*

*Extraction /
Estimation of
metals*

**App's in
various fields**

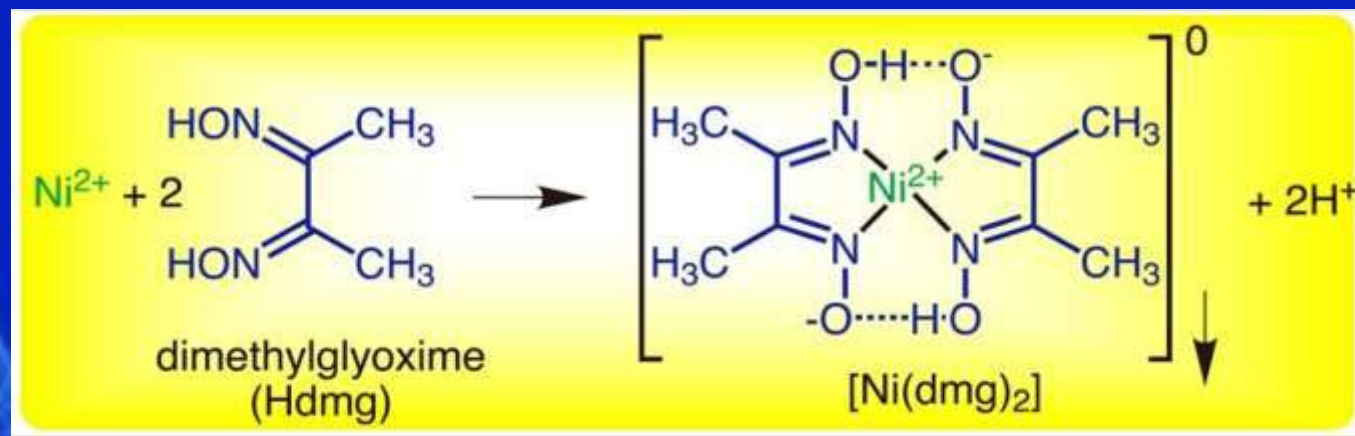
*Chemical analysis
(Qualitative /
Quantitative)*

*Chelation
therapy*

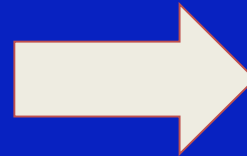
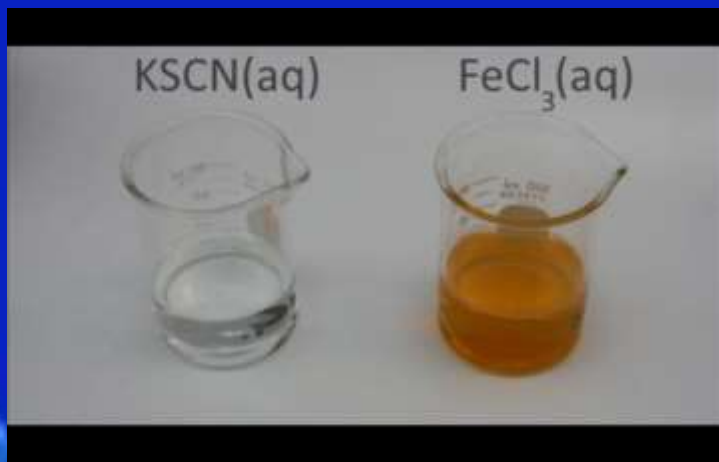
Qualitative Analysis

- *Detection of metal ions*

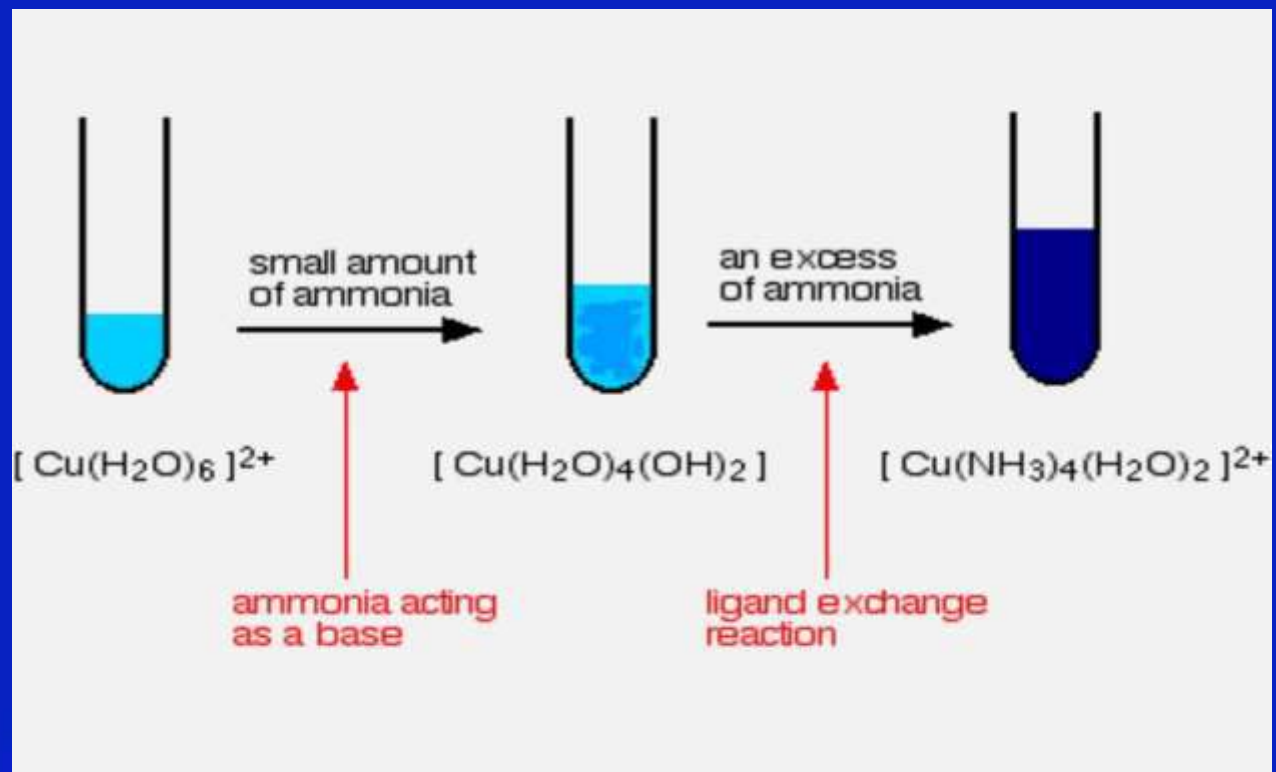
If ammoniacal solution of the substance gives a scarlet red precipitate with DMG it indicates the presence of Nickel



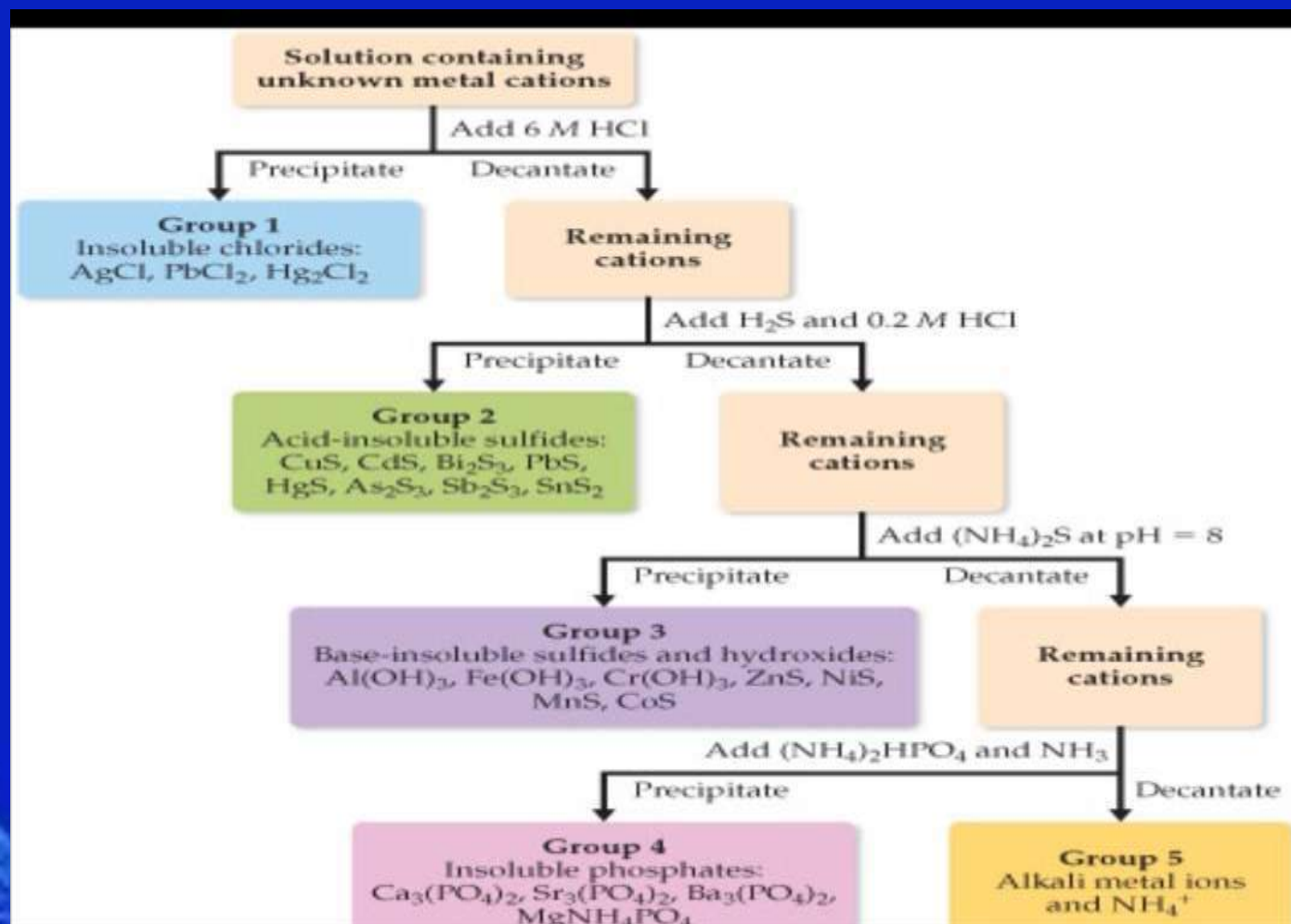
○ If a solution of substance gives a blood red colour with potassium thiocyanate (KSCN) it indicates, the presence of **Iron (III)**. It is due to the formation of $[\text{Fe}(\text{CNS})_6]^{3-}$



○ If a solution of the substance gives a deep blue colour with ammonia it indicates the presence of copper (II). The deep blue colour is due to the formation of the complex $[\text{Cu}(\text{NH}_3)_4]^{2+}$



○ Separating metal ions

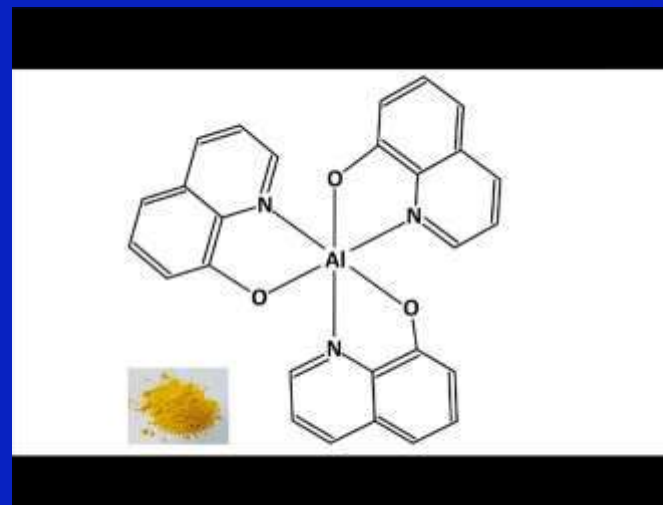


Quantitative Analysis



The Gravimetric Estimation of Nickel:

The nickel is **precipitated as nickel dimethyl glyoxime** by adding alcoholic solution of dimethyl glyoxime $C_4H_6(NO_2)_2$ and then adding a slight excess of aqueous ammonia solution.



Al forms a complex with oxime, it is used for gravimetric estimation of aluminum

○Hardness of water

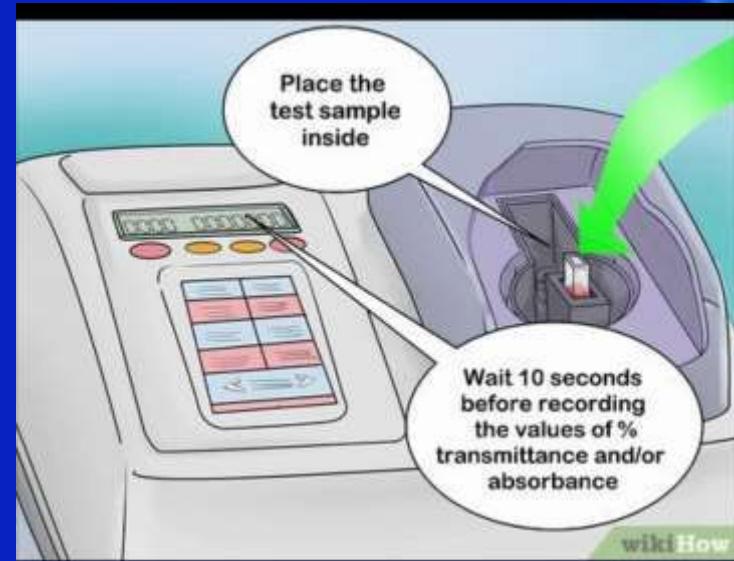
It is estimated by complexometric titration with standard EDTA using EBT or murexide as indicator. The indicator metal complex and the EDTA Ave different colour. So the end point indicates by colour change



Wine red - > Steel blue

○ Spectrometric method

It is used to estimate metal ions like iron, nickel, copper,..



○ Iodine can be estimated by titrating it against Mercury. The formation of a red ppt of HgI_2 , it indicates the end point



THANK YOU

<http://www.trinitycollegenkl.edu.in/>