

PHARMACEUTICAL ANALYSIS – BP102T

UNIT: III PRECIPITATION TITRATION, COMPLEXOMETRIC TITRATION,
GRAVIMETRY AND DIAZOTISATION TITRATION

CLASS:26

TOPIC: ESTIMATION OF MAGNESIUM SULPHATE AND CALCIUM GLUCONATE

Estimation of Magnesium Sulphate

Principle:

It involves direct titration. The required amount of magnesium reacts with EDTA and form Mg-EDTA complex with the help of mordant black-II indicator in the presence of buffer solution

Procedure:

- Take 0.3 gm of MgSO₄ and dissolve in 50 ml of distilled water in conical flask.
- Take standard 0.05M disodium EDTA in burette.
- Add 10 ml of ammonia-ammonium chloride buffer solution in conical flask and add 2 drops of mordant black -II indicator.
- Repeat the process for 3 times and get mean value to avoid errors and to get precise value and perform blank titration.
- And endpoint is pale pink to blue colour

Each ml of 0.05M disodium EDTA = 0.00605 gm of MgSO₄

Estimation of Calcium Gluconate

Principle:

It is replacement type of titration. Magnesium sulphate reacts with indicator and form a colouredmagnesium indicator complex

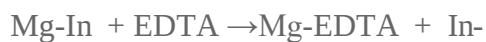
Mg + In -----> Mg-In

Coloured-1(mg-indicator complex)

Calcium reacts with standard disodium EDTA and forms calcium disodium EDTA

complex

After fully utilisation of calcium, a single drop of disodium EDTA breaks/ dissociates magnesium indicator complex and liberates magnesium and indicator with colour which gives information about the completion of reaction



Coloured -II (end point)

Procedure:

- Take 0.5 gm of Calcium gluconate
- Dissolve in 50 ml warm distilled water, allow it to cool and then add 5ml of 0.05M magnesium sulphate.
- Then add 10 ml of $\text{NH}_3\text{-NH}_4\text{Cl}$ buffer solution and add 2 drops of mordant black -II indicator.
- Repeat the process for three times to get precise value and perform blank titration.

Each ml of 0.05 M disodium EDTA = 0.02242 gm of calcium gluco

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