Determination of Chloride
Titration

• Increments of reagent solution (titrant) are added to analyte until the reaction is completed
  – Titrant (know concentration)
  – Analyte (unknown)
  – equivalence point – the quantity of added titrant is the exact amount necessary for stoichiometric reaction with the analyte
  – End point: the experimental estimate of equivalence point.
Detection end point

• Detection of end point: indication – chemical, electrochemical, spectroscopic – means to mark change in a physical property of the solution
Terminologies

- Titrant
- Analyte
- End point
- Indicator: compound with a physical property (color) that changes abruptly near the equivalence point.
- Titration error
- Blank titration
- Primary standard: pure and stable reagent (>99.9%) which can be accurately weighted to make titrant.
- Standardization: use primary standard solution to determine the non primary standard – standard solution.
- Direct titration: titrate the analyte until end point.
- Back titration: add excess amount of one standard solution and use the second standard solution to titrate the excess amount of the first standard solution – slow reaction with analyte or no clear indicator
Properties of Umass Boston

- Descroizilles (1806)
  - Pour out liquid

- Gay-Lussac (1824)
  - Blow out liquid

- Henry (1846)
  - Copper stopcock

- Mohr (1855)
  - Compression clip

- Mohr (1855)
  - Glass stopcock
Properties of Umass Boston
Properties of Umass Boston

Figure 2-7  Typical weighing bottles.

Figure 2-9  Arrangement for the drying of samples.

Figure 2-10  Quantitative transfer of solid sample. Note the use of tongs to hold the weighing bottle and a paper strip to hold the cap to avoid contact between glass and skin.