

General Chapter Prospectus: <541> Titrimetry

Type of Posting: General Announcement

Posting Date: 29–Sept–2017

Expert Committee: General Chapters – Chemical Analysis

Input Deadline: 31–Oct–2017

Estimated proposal PF: Pharmacopeial Forum 44(4) [July – Aug 2018]

Background and objective(s): The current version of General Chapter <541> Titrimetry has not been updated recently. This major revision of the chapter will incorporate the procedures for semi-automated and automated titration systems not currently covered by the chapter. The chapter will address the replacement of calomel electrode by other more environmentally friendly options. Also, the chapter will propose procedures to be used when moving from visual endpoints to instrumental endpoint detection.

Preliminary outline:

- 1 – Introduction
- 2 – Titration Reactions
 - 2.1 Acid-base in aqueous media
 - 2.2 Acid-base in non-aqueous media
 - 2.3 Precipitation
 - 2.4 Complexometry
 - 2.5 Oxidation – Reduction (redox)
 - 2.6 Surfactant Titration
- 3 – Types of Titration
 - 3.1 Direct titration
 - 3.2 Direct Titration with Blank
 - 3.3 Back Titration (Residual Titration)
 - 3.4 Inverse Titration
 - 3.5 Substitution Titration
- 4 – Titration Procedures
 - 4.1 Manual
 - 4.2 Semi-automated
 - 4.3 Automated
- 5 – Recognition of End Points (EP)
 - 5.1 Visual
 - 5.2 Electrochemical
 - 5.2.1 Potentiometric EP
 - 5.2.2 Voltametric EP
 - 5.2.3 Amperometric EP
 - 5.3 Photometric
 - 5.4 Conductometric
 - 5.5 Thermometric
- 6 – How to transfer a titration method from visual EP to electrochemical EP

Anticipated implementation timing: routine

Contact: Margareth R. C. Marques, Principal Scientific Liaison, M.Sc., Ph.D., (301- 816-8106, mrm@usp.org)