

Fundamentals of Potentiometric Titration

This three-day training course provides attendees with a comprehensive understanding of Metrohm potentiometric titration instruments, blending theoretical knowledge with practical experience. The course introduces the fundamentals of potentiometric titration, covering key principles, electrode selection, and proper maintenance. Participants will gain hands-on experience setting up their instruments, maintaining electrodes, and familiarizing themselves with Metrohm's software interface to ensure accurate and reliable results.

As the course progresses, attendees will delve into method development and optimization, learning how to create and customize titration methods for specific applications. Troubleshooting common issues and interpreting results will be a key focus, with practical exercises designed to reinforce learning. Participants will also explore more advanced techniques, automation options, and compliance considerations to enhance efficiency and meet industry standards. The course concludes with a dedicated Q&A and troubleshooting session, allowing attendees to address specific challenges and apply their knowledge through guided hands-on practice.

Agenda

*Please note this agenda is a general overview & may vary slightly from session to session based on instructor discretion, available instruments and customer needs.

Day One:

- Power Point presentations (Tiamo & TiTouch, Electrode Theory).
- Lab practical: Tiamo configuration electrodes and instrumentation (907 Titrando, 804 stirrers, dosing units, aquatrode). pH calibration/measurement. ISE measurement by standard addition.
- Power Point presentation (Electrode Troubleshooting, Intro to Titration).
- Lab practical: solutions, importing/exporting methods. TRIS/HCL titer. Alkalinity.
- Reporting procedure and options.

Day Two:

- Lecture: titration & method parameters (SET/MET/DET) in Tiamo & TiTouch.
- Lab practical: export data, salt titration (precipitation), copper titration (complexometric/ISE), Vitamin C with Iodine (redox), surfactant (ISE) (907 Titrando, 916 Ti-Touch, 804 stirrers, dosing units, Ag ring electrode, CU ISE, Pt sheet electrode, surfactrode, aquatrode).
- Lecture: Tiamo programming (tracks, commands, automation, calculations).
- Lab practical: automated acidity (internal rinse), automated environmental (external rinse), automated Ti-Touch (surfactant with dip rinse) (815 Sample Changer, 772 pump, Ecotrode, 855 Titroprocessor, 856 Conductivity).
- Reprocessing data in Tiamo and TiTouch.

Day Three:

- Power Point presentation (Troubleshooting Training, Troubleshooting in Titration).
- Lecture: analysis and hardware troubleshooting.
- General Q&A.