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| Title | Perform titrations | | |
| Level | 5 | Credits | 5 |

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| Purpose | People credited with this unit standard are able to: perform a back titration; perform a multi-component titration; perform an acid base non-aqueous titration; and perform a conductometric titration. |
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| Classification | Science > Chemistry |
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| Available grade | Achieved |
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Guidance Information

- 1 Recommended skills and knowledge: Unit 26341, *Perform titrimetric analyses*; and Unit 8448, *Demonstrate knowledge of acid-base pH measurement and equilibria*.
- 2 All work must be carried out in accordance with the quality management system, documented protocol system or Standard Operating Procedures typically acceptable in a commercial or research laboratory.
- 3 Health and Safety practices must conform to Australian/New Zealand Standard AS/NZS 2243:2010 Set – *Safety in Laboratories*, available at <http://www.standards.co.nz> and <http://infostore.saiglobal.com/store>.
- 4 Legislation applicable to this unit standard includes:
Health and Safety at Work Act 2015;
Hazardous Substances and New Organisms Act 1996.

Outcomes and performance criteria

Outcome 1

Perform a back titration.

Performance criteria

- 1.1 Back titration method is selected and justified in terms of the analyte.
- 1.2 Titration is carried out and the composition of a known sample is determined to within a relative accuracy of $\pm 5\%$.

Outcome 2

Perform a multi-component titration.

Range binary mixtures of acids or bases, Ca^{2+} , Mg^{2+} (water hardness).

Performance criteria

- 2.1 Titration is carried out and the components of a known binary mixture in aqueous solution are determined to within a relative accuracy of $\pm 5\%$.

Outcome 3

Perform an acid-base non-aqueous titration.

Performance criteria

- 3.1 Non-aqueous solvent is selected and justified in terms of the analytes.
- 3.2 Titration is carried out and the concentration of a known solution in a non-aqueous solvent is determined to within a relative accuracy of $\pm 5\%$.

Outcome 4

Perform a conductometric titration.

Range one of – strong acid and strong base, strong acid and weak base, weak acid and strong base, precipitation.

Performance criteria

- 4.1 Titration is carried out and the concentration of a known sample is determined within a relative accuracy of $\pm 5\%$.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

| Process | Version | Date | Last Date for Assessment |
|-----------------------|---------|------------------|--------------------------|
| Registration | 1 | 22 December 1996 | 31 December 2014 |
| Revision | 2 | 19 February 1998 | 31 December 2014 |
| Review | 3 | 23 November 1999 | 31 December 2014 |
| Review | 4 | 18 June 2010 | 31 December 2022 |
| Rollover | 5 | 27 January 2015 | 31 December 2022 |
| Rollover and Revision | 6 | 15 June 2017 | 31 December 2022 |
| Revision | 7 | 26 October 2017 | 31 December 2022 |
| Review | 8 | 22 October 2020 | 31 December 2022 |

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| Consent and Moderation Requirements (CMR) reference | 0113 |
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

This unit standard is expiring