

<b>Title</b>	<b>Perform qualitative anion and cation analysis</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	People credited with this unit standard are able to identify and confirm the presence of anions and cations in unknown samples using wet chemical techniques.
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<b>Classification</b>	Science > Chemistry
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<b>Available grade</b>	Achieved
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### Guidance Information

- 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.
- 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>.
- Legislation applicable to this unit standard includes:  
Health and Safety at Work Act 2015;  
Hazardous Substances and New Organisms Act 1996.
- Knowledge underpinning the competencies in this unit standard includes but is not limited to equilibrium constants.

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### Outcomes and performance criteria

#### Outcome 1

Identify and confirm the presence of anions in unknown samples using wet chemical techniques.

Range four anions from – Cl<sup>-</sup>, Br<sup>-</sup>, I<sup>-</sup>, NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, CO<sub>3</sub><sup>2-</sup>, SO<sub>3</sub><sup>2-</sup>, SO<sub>4</sub><sup>2-</sup>, PO<sub>4</sub><sup>3-</sup>, S<sup>2-</sup>, OH<sup>-</sup>.

#### Performance criteria

- Anions are identified and their presence confirmed in the given sample in accordance with wet chemical techniques used.
- Balanced equations are written consistent with results obtained.

**Outcome 2**

Identify and confirm the presence of cations in unknown samples using wet chemical techniques.

Range two cations from – Ag<sup>+</sup>, Pb<sup>2+</sup>, Cu<sup>2+</sup>, Cd<sup>2+</sup>, Hg<sup>2+</sup>, Al<sup>3+</sup>, Cr<sup>3+</sup>, Fe<sup>3+</sup>, Ni<sup>2+</sup>, Co<sup>2+</sup>, Mn<sup>2+</sup>, Zn<sup>2+</sup>.

**Performance criteria**

2.1 Cations are identified and their presence confirmed in the given sample in accordance with wet chemical techniques used.

2.2 Balanced equations are written consistent with results obtained.

**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	24 September 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

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