

<b>Title</b>	<b>Analyse aeronautical electroplating solutions</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>15</b>

<b>Purpose</b>	People credited with this unit standard are able to: prepare to analyse aeronautical electroplating solutions; perform titrimetric analyses; perform gravimetric analyses; interpret the results of analysis; and complete finishing activities related to solution analysis.
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<b>Classification</b>	Aeronautical Engineering > Aeronautical Electroplating
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	<p>Demonstrated competence in safety precautions in a laboratory is essential for those seeking credit for this unit standard.</p> <p>Knowledge of the safety precautions of acid-based chemical reactions is essential for those seeking credit for this unit standard.</p>
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### Guidance Information

- 1 All tasks must be carried out in accordance with enterprise procedures.
- 2 **Definition**  
*Enterprise procedures* – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 3 Analysis is always carried out in a laboratory, that has a gas cleaning capability to less than five parts per million contamination.
- 4 Highly toxic chemicals can be produced during analysis; all acts, regulations, and bylaws regarding the handling of toxic material and waste must be complied with during assessment against this standard.
- 5 When taking a representative sample, di-phase solutions should not be agitated.

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## Outcomes and performance criteria

### Outcome 1

Prepare to analyse aeronautical electroplating solutions.

#### Performance criteria

- 1.1 Task is determined by reviewing analysis documentation and enterprise procedures.
- 1.2 Laboratory environment is prepared.
- Range may include but is not limited to – laboratory apparatus, glassware, fume cupboard, balances, pH meter, conductivity measurement devices.
- 1.3 Reagents are prepared.
- Range may include but is not limited to – indicators, standard, molar, normal solutions.
- 1.4 Representative sample of solution to be analysed is taken.
- Range solution levels; may include agitation by filtration or mechanical methods.

### Outcome 2

Perform titrimetric analyses.

#### Performance criteria

- 2.1 Procedure, equipment, and indicators are selected to meet the needs of various titration methods.
- Range methods may include but are not limited to – acid/base, oxidation/reduction, precipitation, potentiometric; at least two titrations per sample must be performed.
- 2.2 Data is recorded in a systematic format.

### Outcome 3

Perform gravimetric analyses.

**Performance criteria**

3.1 Experimental procedure is selected and performed to meet the needs of the analysis.

Range may include but is not limited to – chemical precipitation, evaporation and/or thermal decomposition.

3.2 Composition of a sample is determined to achieve a relative accuracy of  $\pm 5\%$  of the certified reference value.

3.3 Data is recorded in a systematic format.

**Outcome 4**

Interpret the results of analysis.

**Performance criteria**

4.1 Results are calculated according to the analytical procedure.

4.2 Conclusions are determined and are consistent with analytical data.

4.3 Remedial action is taken to ensure it conforms with solution specification and operating parameters.

**Outcome 5**

Complete finishing activities related to solution analysis.

**Performance criteria**

5.1 Resources are checked for serviceability and returned to service or storage.

Range may include but is not limited to – laboratory equipment, safety equipment.

5.2 Leftover chemicals and materials are disposed of.

Range may include but is not limited to – surplus, waste, scrap, hazardous material.

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<b>Planned review date</b>	31 December 2027
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	26 March 2007	31 December 2016
Review	2	24 October 2014	31 December 2021
Review	3	26 March 2020	N/A
Rollover and Revision	4	26 April 2024	N/A

**Consent and Moderation Requirements (CMR) reference**

0028

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

**Comments on this unit standard**

Please contact Ringa Hora Services Workforce Development Council [qualifications@ringahora.nz](mailto:qualifications@ringahora.nz) if you wish to suggest changes to the content of this unit standard.