



**Australian Government**

**MSL975067 Perform complex tests to  
measure chemical properties of materials**

**Release: 1**

# MSL975067 Perform complex tests to measure chemical properties of materials

## Modification History

Release 1. Supersedes and equivalent to MSL975046 Perform complex tests to measure chemical properties of materials. Element 6 integrated into Element 5. Minor changes to Performance Criteria. Removal of duplicating items in Knowledge Evidence.

## Application

This unit of competency describes the skills and knowledge to isolate analytes from complex matrices and perform multi-staged and multi-component analyses on them. The unit requires personnel to apply detailed knowledge of analytical chemistry to plan the analysis, prepare and measure samples, analyse and report results and make approved adjustments to procedures as required. Personnel are required to recognise atypical test data and results and troubleshoot common analytical procedure and equipment problems.

This unit applies to technical working in all industry sectors. All operations must comply with relevant standards, appropriate procedures and workplace requirements. Although a supervisor may not always be present, the technician will follow workplace procedures that clearly describe the scope of permitted practice, including varying workplace/test procedures and communicating results to people outside the laboratory.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

## Pre-requisite Unit

MSL974032 Perform chemical tests and procedures.

## Competency Field

Testing

## Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Develop an analysis plan with supervisor	1.1 Liaise with client or sample provider to determine test requirements and sample characteristics 1.2 Match sample provided to accompanying documentation and report

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	any discrepancies in accordance with workplace procedures 1.3 Confirm suitable sample preparation methods, quantification and analytical techniques with supervisor
2. Reduce the complexity of the sample	2.1 Obtain a representative analytical portion of the laboratory sample 2.2 Prepare validation checks for analytical portions 2.3 Use workplace procedures to simplify the sample matrix 2.4 Conduct tests to ensure that sample preparation is complete
3. Apply quantification method	3.1 Add modifiers to remove or minimise interferences 3.2 Conduct preliminary analysis to estimate analyte concentration 3.3 Match the concentration of analyte in the sample with the working range of the instrument 3.4 Prepare calibration standards to suit quantification method
4. Perform analysis	4.1 Set up and optimise instruments to suit sample and test requirements 4.2 Measure analyte response for standards, validation checks and samples 4.3 Conduct sufficient measurements to obtain reliable data 4.4 Return instruments to standby or shutdown condition in accordance with workplace procedures
5. Process, analyse and record data	5.1 Confirm data is the result of valid measurements 5.2 Perform required calculations and ensure results are consistent with estimations and expectations 5.3 Record results with the appropriate accuracy, precision units and uncertainty 5.4 Analyse trends in data and/or results and report out-of-specification or atypical results promptly to appropriate personnel 5.5 Troubleshoot analytical procedure or equipment problems which have led to atypical data or results 5.6 Follow procedures to ensure traceability of sample from receipt to reporting of results

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Unit Mapping Information

Supersedes and is equivalent to MSL975046 Perform complex tests to measure chemical properties of materials.

## Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet – -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>