



Australian Government

Assessment Requirements for MSL974032

Perform chemical tests and procedures

Release: 1

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Modification History

Release 1. Supersedes and equivalent to MSL974019 Perform chemical tests and procedures. Element 7 integrated into Element 5. Minor changes to Performance Criteria. Minor refinements in Knowledge Evidence to provide guidance about scope and depth of knowledge required.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely performed at least 3 different multi-step chemical tests including at least 1 of the following:
 - colorimetric techniques
 - spectrometric techniques
 - chromatographic techniques
 - electrochemical techniques
 - electrophoretic techniques
 - soil testing techniques
 - gravimetric analysis
 - titrimetric analysis
 - filtration, separation and solvent extraction techniques
 - corrosion testing, cement content and accelerated weathering.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- basic aspects of chemical principles and concepts, including:
 - elements, compounds, ions, atoms, molecules, bonding and links to chemical properties
 - periodic table and system for symbols of elements
 - atomic mass and molecular weight
 - moles and molarity
 - chemical formulae and balancing equations
 - chemical reactions
 - energy levels and absorption/emission spectra
- purpose and principles of tests and/or procedures performed as part of job role

- international system of units (SI)
- principles and concepts related to equipment and instrument operation, tests and/or procedures
- requirements for cleaning up spills and reporting faulty or unsafe equipment, hazards and incidents.
- concepts of metrology, including:
 - all measurements are estimates
 - precision, accuracy and significant figures
 - sources of error, uncertainty and repeatability
 - traceability
- function of key components of the equipment and instrument and reagents and effects of modifying equipment and instrument variables
- common causes of analytical errors
- calibration requirements and basic equipment and method troubleshooting procedures
- sample preparation procedures for the tests and/or procedures conducted
- traceability requirements
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task.
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Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - a standard laboratory equipped with appropriate sample preparation and test equipment, instruments, standards and reagents
 - records, including test and calibration results; equipment use, maintenance and servicing history, and faulty or unsafe equipment
 - workplace procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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>