



Australian Government

Assessment Requirements for MSL974017

Prepare, standardise and use solutions

Release: 1

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Modification History

Release	Comments
Release 1	<p>This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>.</p> <p>Supersedes and equivalent to MSL974001 Prepare, standardise and use solutions. Foundation skill information added. Range of conditions removed. Assessment requirements amended.</p>

Performance Evidence

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

- prepared and effectively standardised at least 3 different solutions in accordance workplace procedures and/or standard methods
- selected and used primary and secondary standards and indicators
- determined equivalence points using indicators and graphical methods.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- concepts of metrology, including:
 - all measurements are estimates
 - precision, accuracy and significant figures
 - sources of error, uncertainty and repeatability
 - traceability
- scientific terminology for different types of solutions
- the chemistry of acids, bases, buffers and redox reactions
- chemical symbols and atomic mass
- formulae for calculating concentration % w/w, % w/v, % v/v, ppm (mg/L)
- moles and molarity
- what affects solubility
- reactions used for standardisation and desirable characteristics
- function and use of basic laboratory equipment
- grades of glassware, reagents and their use
- established safe work practices:

- use of PPE, such as safety glasses, gloves and coveralls
- correctly labelling reagents and hazardous materials
- handling and storing hazardous material and equipment in accordance with labels, SDS, manufacturer instructions, and workplace procedures and regulations
- regular cleaning and/or decontamination of equipment and work areas
- prompt clean-up of spills in accordance workplace procedures
- 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.

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 reagents and equipment to prepare and standardise solutions, such as pH meters; balances; magnetic stirrers, water baths and hot plates; measuring cylinders, beakers, conical flasks, volumetric flasks, pipettes and burettes; filter papers and funnels; and fume cupboards
 - standard methods and workplace procedures
 - containers and storage facilities.

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>