



Australian Government

MSL904002 Perform standard calibrations

Release: 1

MSL904002 Perform standard calibrations

Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL904001 Perform standard calibrations. Foundation skills information added. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit of competency describes the skills and knowledge to calibrate test and measurement equipment in accordance with standard calibration procedures and documented test methods. These procedures/methods specify all associated reference standards, materials, equipment and methods to be used and the required parameters or quantities and ranges to be tested, including the criteria for rejection or approval.

This unit applies to laboratory and calibration technicians who carry out tests and/or calibrations using standard calibration methods in first, second and third party laboratories, and laboratories where testing and/or calibration forms part of inspection or product certification. Personnel are not permitted to deviate from explicit instructions in any manner, modify the procedure, nor substitute alternative equipment. They work under limited supervision and results of their work are interpreted and checked by the laboratory supervisor, quality inspector or designated signatory.

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

Nil

Competency Field

Calibration

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--------------------------------------|-----|--|
| 1 | Prepare items for calibration | 1.1 | Select the authorised calibration procedure in accordance with workplace procedures |
| | | 1.2 | Identify hazards and use appropriate personal protective equipment (PPE), safety equipment and procedures |
| | | 1.3 | Confirm all measuring equipment meets the laboratory's specification requirements and complies fully with the calibration procedure |
| | | 1.4 | Assemble and set up specified reference standards and associated equipment prior to testing |
| | | 1.5 | Verify performance of reference standards and measuring equipment prior to use and adjust or calibrate as necessary |
| | | 1.6 | Identify and minimise potential sources of measurement error |
| | | | |
| 2 | Perform calibration | 2.1 | Perform individual tests without variance according to the documented procedure to ensure repeatability of measurement |
| | | 2.2 | Confirm readings are the result of a valid measurement and record data as required (as-found or before adjustment) |
| | | 2.3 | Adjust device under test to bring readings within specification and record data (as-left or after adjustment) where required |
| | | 2.4 | Analyse resulting test data to detect trends or inconsistencies that would significantly affect the accuracy or validity of test results |
| | | 2.5 | Seek appropriate advice when interpretation of results is outside authorised scope of approval |
| | | | |
| 3 | Document results | 3.1 | Estimate and document uncertainty of measurement in accordance with workplace procedures, where required |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.	
	3.2	Document compliance/non-compliance with test requirements and/or specifications
	3.3	Record the results of each test/calibration accurately, unambiguously and objectively
	3.4	Ensure confidentiality of workplace information in accordance with workplace procedures
4 Finalise calibration	4.1	Prepare and issue a final report on the job/item detailing testing carried out, traceability, statement of compliance and relevant information
	4.2	Report any non-compliance and verify next course of action with supervisor
	4.3	Attach calibration labels, equipment stickers, quality control tags and tamper resistant seals as required in accordance with workplace procedures
	4.4	Store test equipment/measurement standards and results in accordance with workplace procedures

Foundation Skills

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

- Numeracy skills to:
 - perform calculations to give results in appropriate accuracy, precision and units
 - use statistical analysis (means, ranges and standard deviations) and estimation of uncertainty of measurement.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Equivalent to MSL904001 Perform standard calibrations, Release 1.

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>

Assessment Requirements for MSL904002 Perform standard calibrations

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Performance Evidence

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

- safely and accurately calibrated a minimum of 3 different items of test and/or measurement equipment from the following list:
 - balance
 - thermometer
 - thermocouple
 - pH meter
 - refractive index meter
 - viscosity meter
 - flow meter (including digital)
 - volumetric dispenser including auto-pipette (POVAs)
 - volumetric glass (once for life time)
 - spectrophotometer
 - incubator/oven/fridge
 - digestion block
 - biological safety cabinet
 - fume cupboard.

Calibrations must be carried out in accordance with standard calibration procedures and documented test methods.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- purpose of metrology and calibration, including common terminology, concepts, principles, procedures and applications
- National Association of Testing Authority's (NATA) and National Measurement Institute's (NMI) role in the measurement and testing system in Australia and registration/licensing requirements
- requirements for the competence of testing and calibration laboratories (e.g. AS ISO/IEC 17025) as they affect job role and responsibilities
- Australian and international standards and codes covering requirements for the competence of testing and calibration laboratories
- standards imposed by regulatory and licensing bodies
- statistical analysis of quality control data, mean, median, mode, ranges and standard deviations
- hierarchy and appropriate selection of reference materials and instruments
- commonly used reference materials and working standards
- test equipment relevant to job role
- workplace procedures for:
 - non-conformance/non-compliance
 - equipment operation
 - calibration
 - troubleshooting for equipment and test methods
 - recording and reporting
 - handling, transport, storage and operation of reference and working standards
 - test methods and calibration (validated and authorised)
- different fields in which calibration work is conducted
- workplace and/or legal traceability requirements
- 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:
 - specialised calibration/test equipment, reference standards and laboratory facilities
 - calibration methods, procedures and equipment specifications
 - workplace quality manual and procedures.

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

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