



**Australian Government**

# **Assessment Requirements for MSL924001**

## **Process and interpret data**

**Release: 2**

# Assessment Requirements for MSL924001 Process and interpret data

## Modification History

Release 1. Supersedes and is equivalent to MSL924001A Process and interpret data

## Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- retrieving coding, recording and checking data
- calculating scientific and statistical quantities with or without a calculator or computer software, including the following items:
  - converting units involving multiples and submultiples
  - scientific notation, significant figures, round off, estimate and approximate
  - transposing and evaluating formulae
  - fractions, decimals, proportions and percentages
  - mean
  - median
  - mode
  - standard deviation
- performing at least five (5) of the following calculations:
  - perimeters and angles
  - percentage and absolute uncertainties in measurements and test results
  - areas (m<sup>2</sup>) and volumes (mL, L, m<sup>3</sup>) of regular shapes, such as packaging
  - dose (mg), average mass, mass percentage, density, specific gravity, moisture, relative and absolute humidity, viscosity and permeability
  - ratios, such as mass to mass, mass to volume and volume to volume percentages
  - concentration, such as molarity, g/100mL, mg/L, mg/L, ppm, ppb, dilution mL/L
  - average count, colonies per swab surface and cell counts, such as live and dead/total
  - process variables, such as pressure, gauge pressure, velocity and flow rates
  - biological oxygen demand (BOD), chemical oxygen demand (COD) and total organic carbons (TOC)
  - food properties, such as % concentration (dry), friability, bitterness, brix, free amino nitrogen, diastatic power, calorific content and yeast viability, % content of moisture, ash, fat, protein, alcohol, sulphur dioxide and trace metals, such as calcium or zinc
  - mechanical properties, such as stress, strain, moduli and force
  - presenting accurate results in the required format (significant figures, uncertainty units)
- preparing and presenting data in the following formats:

- tables
- graphs
- line graphs
- histograms
- pie charts, bar charts and control charts
- semi-quantitative observations expressed on a scale (e.g. 1 to 4 or + to ++++)
- recognising and interpreting significant points, anomalies and trends in data
- maintaining the confidentiality of data in accordance with workplace and regulatory requirements
- keeping accurate records that are up-to-date and secure.

## Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- concepts of metrology, including:
  - that all measurements are estimates
  - measurements belong to a population of measurements of the measured parameters
  - repeatability, precision, accuracy and significant figures
  - sources of error, and uncertainty associated with measurement steps
  - traceability
- the international system of units (SI)
- scientific and technical terminology relevant to job role
- procedures for coding, entering, storing, retrieving and communicating data
- procedures for verifying data and rectifying mistakes
- procedures for maintaining and filing records, and maintaining security of data
- work health and safety (WHS) and environment requirements.

## Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
  - MSL924002 Use laboratory application software
  - technical units, such as:
  - relevant MSL973000 series units of competency
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- Holistic assessment methods include:
  - review of data worksheets, calculations, computer files (such as spreadsheets, databases and statistical analysis), graphs, tables and/or charts prepared by the candidate
  - review of records transcribed, maintained or stored by the candidate
  - feedback from supervisors and peers
  - questions to assess understanding of calculations, relevant procedures and trends in data
  - observation of the candidate as they process data, file and store records.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
  - data sets and records
  - a calculator
  - spreadsheets, computer software, databases and statistical packages
  - computer and relevant software or laboratory information system
  - relevant workplace procedures.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
  - relevant VET or other qualification/Statement of Attainment AND/OR
  - relevant workplace experience
- Currency can be demonstrated through:
  - performing the competency being assessed as part of current employment OR
  - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

## Links

Companion Volumes, including Implementation Guides, are available at VETNet: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b75f4b23-54c9-4cc9-a5db-d3502d154103>