



Australian Government

MSL924005 Process and interpret data

Release: 1

MSL924005 Process and interpret data

Modification History

Release 1. Supersedes and equivalent to MSL924003 Process and interpret data. Minor changes to Performance Criteria, including moving of list in Element 4 to Performance Evidence. Performance Evidence significantly reworked for improved clarity with examples removed. Minor wording changes to Knowledge Evidence.

Application

This unit of competency describes the skills and knowledge to retrieve data, evaluate formulae, perform scientific calculations, present and interpret information in tables and graphs and keep accurate records. The unit requires personnel to solve problems of limited complexity where the information may be less obvious, but not contradictory, and can be determined by direct reasoning.

This unit of competency applies to laboratory assistants, field/laboratory technicians and instrument operators in all industry sectors.

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

Data

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. Retrieve and check data	1.1 Retrieve data using appropriate files and/or application software 1.2 Verify the quality of data using workplace procedures 1.3 Rectify errors in data using workplace procedures
2. Calculate scientific quantities	2.1 Calculate statistical values for given data 2.2 Calculate scientific quantities using given formulae and data

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	2.3 Ensure calculated quantities are consistent with estimations and expectations 2.4 Report all calculated quantities using the appropriate units and correct number of significant figures
3. Present data	3.1 Present data in clearly labelled tables, charts and graphs 3.2 Graph data using appropriate scales to span the range of data or display trends 3.3 Report all data using the appropriate units and number of significant figures
4. Interpret data	4.1 Correctly interpret significant features of tables, charts and graphs 4.2 Recognise and report significant points, anomalies and trends in data
5. Keep accurate records	5.1 Transcribe information accurately 5.2 Verify the accuracy of records, following workplace procedures

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 MSL924003 Process and interpret data.

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 MSL924005 Process and interpret data

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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:

- calculated 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
 - percentages
 - mean
 - median
 - mode
 - ratios
 - range
 - standard deviation
- performed at least 4 of the following calculations:
 - dimensions of 2D shapes, including perimeters and areas
 - dimensions of 3D shapes, including areas and volumes
 - logarithmic functions
 - trigonometric functions, including trigonometric ratios (sin cos tan) and Pythagoras theorem
 - absolute and relative uncertainties in measurements and test results
 - industry specific quantities
 - concentration
 - enumeration of microbiological organisms
 - process variables
 - food properties

- mechanical properties
- presented accurate results in the required format (significant figures, uncertainty units)
- performed sort, filter and basic calculations using computer software
- prepared and presented data in at least 5 of the following formats using computer software:
 - tables
 - line graphs
 - scatter plot
 - pie charts
 - bar charts
 - control charts
 - semi-quantitative observations expressed on a scale: 1 to 4 or + to ++++
- recognised and interpreted the following significant features in data:
 - gradients
 - intercepts
 - maximum and minimum values
 - limit lines
 - anomalies and trends.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- concepts of metrology, including:
 - that all measurements are estimates
 - difference between error and correction
 - repeatability, precision, accuracy and uncertainty associated with each measurement result
 - sources of error and uncertainty
 - metrological traceability
 - significant figures
- the international system of units (SI)
- existence and purpose of national measurement regulations and guidelines and how this relates to job role
- scientific quantities and calculations relevant to job role
- types of data processing software
- workplace procedures for:
 - coding, entering, storing, retrieving and communicating data
 - verifying data and rectifying mistakes
 - maintaining and filing records and maintaining security of data.
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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:
 - data sets and records
 - calculator, computer and relevant software or laboratory information management system
 - workplace procedures.

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

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