



Australian Government

Assessment Requirements for MSL925006

Analyse data and report results

Release: 1

Assessment Requirements for MSL925006 Analyse data and report results

Modification History

Release 1. Supersedes and equivalent to MSL925004 Analyse data and report results. Minor changes to Performance Criteria and Knowledge Evidence. Performance Evidence significantly reworked for clarity with some duplicating information removed.

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 quantities of laboratory data, including at least 4 of the following (note that the items in each bullet point count as one):
 - absolute and relative error or uncertainties in measurements and test results
 - pH, [H⁺], [OH⁻] and buffer calculations
 - K_a, pK_a, K_b, pK_b and K_w
 - solubility constants K_s and pK_s
 - radioactivity (half-life, dose, activity and exposure)
 - optical properties, including absorbance/transmittance, path length, extinction coefficient, concentration (Beers law) and detection limits
 - electrical properties, including conductivity, resistivity and dielectric constants
 - mechanical properties, including stress, strain, elastic moduli, yield strength and hardness
 - thermal properties, including heat capacity, thermal expansion, thermal conductivity and thermal resistance
 - food content (%) of water, ash, dietary and crude fibre, carbohydrate, protein, fat and specific vitamin
 - quality-related data
 - industry-specific quantities
- used and interpreted graphical and statistical analysis, and significance tests of laboratory data sets, including 4 of the following:
 - mean, median, mode, range, variance and standard deviation
 - measures of central tendency and dispersion
 - histograms, frequency plots, stem and leaf plots, boxplots and scatter plots
 - probability and normal probability plots
 - Pareto diagrams, Shewhart control charts and CuSum control charts
 - regression methods for calibration, linearity checks
 - data acceptability tests.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- meaning of scientific and technical terminology, including variables, dispersion, central tendency, process control, process stability, normal distribution, confidence level and replication
- characteristics of a valid measurement
- relevance/importance of the national measurement legislation and guidelines to laboratory measurement
- sources and estimates of uncertainty in measurements
- workplace procedures for:
 - metrological traceability
 - verifying data and rectifying mistakes
 - maintaining and filing records, and maintaining security of data
- potential issues and requirements related to bias and impartiality.
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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, including spreadsheets, databases and statistical packages or laboratory information management system
 - 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>