



Australian Government

Assessment Requirements for MSL975019

Apply complex instrumental techniques

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL975019A Apply complex instrumental techniques

Performance Evidence

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

- using a specialised analytical instrument to analyse complex samples and obtain valid and reliable data on at least three (3) occasions
- accurately interpreting client requests and test methods/procedures
- establishing client needs for routine and non-routine samples
- safely setting up, operating and shutting down equipment
- checking calibration and qualification status of equipment
- preparing samples and standards
- assembling and optimising instrument sub-systems
- optimising a specialised analytical instrument and/or procedures for specific samples
- interpreting data, recognising atypical test data and results and making relevant conclusions
- troubleshooting common analytical procedure and equipment problems
- preparing and using calibration charts and standards
- identifying and calculating potential sources of uncertainty
- calculating analyte concentrations using appropriate equations, units, uncertainties and precision
- recording and reporting data and results using workplace procedures
- maintaining security, integrity and traceability of samples and documentation
- following workplace safety procedures.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- principles and concepts associated with a specialised analytical instrument's operation and analytical procedure or test method
- handling of unstable or hazardous chemicals and samples and the fragile and labile nature of biological materials
- sample preparation procedures
- functions of key components and sub-systems of the instrument and the effects on outputs and results of modifying instrumental variables
- procedures for optimising instrument performance
- basic procedure and equipment troubleshooting techniques
- common analytical procedure and equipment problems, such as:
 - sample introduction blockages
 - incomplete atomisation of analyte
 - poor resolution of peaks
 - poor sensitivity
- calculation steps to give results in appropriate accuracy, precision, uncertainty and units
- basic equipment maintenance procedures
- workplace and legal traceability requirements
- relevant hazards, work health and safety (WHS) and environment requirements.

Assessment Conditions

- Judgment 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:
 - *MSL925001 Analyse data and report results*
- Holistic assessment methods include:
 - review of test data/results obtained by the candidate over time to ensure accuracy and consistency of results
 - inspection of test records and workplace documentation completed by the candidate
 - observation of candidate using specialised instruments to measure analytes
 - feedback from clients, peers and supervisors about the candidate's ability to provide valid and reliable results within expected timeframes
 - oral or written questioning of relevant chemical principles, concepts, analytical techniques and workplace procedures.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a standard laboratory with specialised analytical instruments, laboratory reagents and equipment, standard operating procedures (SOPs) and test methods.
- 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 competence 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

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>