



Australian Government

Assessment Requirements for MSS017002

Determine process loss through mass or energy balancing

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSS017002A Determine process loss through mass or energy balancing.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include the ability, for one (1) or more system, each of which contains five (5) or more subsystems/plant units, to:

- undertake a mass and an energy balance (which may be on different systems) or a combined mass/energy balance
- identify appropriate responses
- communicate the above as appropriate.
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Knowledge Evidence

Must provide evidence that demonstrates sufficient knowledge to interact with relevant personnel and be able to determine process loss through mass or energy balancing including knowledge of:

- process and changes which occur at each step in selected value chain
- principles of sustainability
- root cause analysis
- relevant legislation, regulation and protocols, government incentives and other initiatives
- first law of thermodynamics
- defining boundaries for systems subject to mass/energy balancing
- required data, sources of data from process, and use of data proxies, where necessary
- mass balancing techniques
- energy balancing techniques, including the use of tables of thermodynamic properties (steam tables), and the use of specific heat capacity and specific latent heat
- combined mass/energy balancing techniques, including the use of heats or reaction/dissolution
- methods of reducing resource losses for process and equipment.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence shall be based on a holistic assessment of the evidence.
- The collection of performance evidence is best done from a report and/or folio of evidence drawn from:
 - a single project which provides sufficient evidence of the requirements of all the elements and performance criteria
 - multiple smaller projects which together provide sufficient evidence of the requirements of all the elements and performance criteria.
- A third party report, or similar, may be needed to testify to the work done by the individual, particularly when the project has been done as part of a project team.
- Assessment should use a real project where the analysis of a process to determine loss of resources by the application of mass and energy balancing occurs for an operational workplace.
- 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).
- 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.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- 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 an organisation providing relevant environmental monitoring, management or technology services about performing the competency being assessed within the last twelve months.

Links

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