



Australian Government

MSL973027 Perform techniques that prevent cross-contamination

Release: 1

MSL973027 Perform techniques that prevent cross-contamination

Modification History

Release 1. Supersedes and equivalent to MSL973016 Perform aseptic techniques. Title changed to indicate broader scope. Two Performance Criteria removed from Element 2 to reflect increasing use of single-use items. Slight adjustment to Performance Evidence to include additional sample type. Addition to Knowledge Evidence in relation to handling specimens and processing samples for molecular analysis. Removal of some example detail from Assessment Conditions.

Application

This unit of competency describes the skills and knowledge to perform techniques that prevent cross-contamination to maintain the integrity of both the sample source, and the sample and protect people and the environment. It applies to sampling techniques in tissue culture, generic microbiological, molecular and chemical procedures.

This unit of competency applies to laboratory assistants and technicians working in the field or laboratory in the biomedical, biological, food processing and environmental 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.

Competency Field

Testing

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. Prepare for sampling or transfer	1.1 Check the sampling procedure conforms with the required sampling plan 1.2 Use specified personal protective equipment (PPE) 1.3 Prepare the work area for safe and effective sample workflows 1.4 Select equipment and materials specified by the procedure 1.5 Organise equipment to minimise contamination during manipulations

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	1.6 Label containers for clear identification 1.7 Record details in relevant log or database 1.8 Macroscopically assess media and/or reagents to confirm integrity before use
2. Transfer materials	2.1 Protect the integrity of the sample source 2.2 Perform transfer while minimising opportunities for contamination and/or cross-infection 2.3 Protect the integrity of the sample source and destination after transfer, and before sealing the transport or culture vessel 2.4 Perform quality control checks to confirm contaminate-free transfer was successful 2.5 Label transport or culture vessels for clear identification
3. Maintain work area and equipment to prevent cross-infection and contamination	3.1 Place disposable and reusable items into relevant receptacles 3.2 Clean, disinfect and/or sterilise work area and equipment after use 3.3 Transport disposable and reusable contaminated materials to relevant areas for disinfection, sterilisation and cleaning or disposal 3.4 Follow personal hygiene 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 MSL973016 Perform aseptic techniques.

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 MSL973027 Perform techniques that prevent cross-contamination

Modification History

Release 1. Supersedes and equivalent to MSL973016 Perform aseptic techniques. Title changed to indicate broader scope. Two Performance Criteria removed from Element 2 to reflect increasing use of single-use items. Slight adjustment to Performance Evidence to include additional sample type. Addition to Knowledge Evidence in relation to handling specimens and processing samples for molecular analysis. Removal of some example detail from Assessment Conditions.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely and effectively performed techniques that prevent cross-contamination when performing at least 3 different types of sample transfers, with at least 3 from the following list:
 - bacterial cultures
 - body fluids (or simulated body fluids)
 - sterile liquid culture media
 - purified reagents
 - water
 - soil
 - sterile pharmaceuticals
 - fungi
 - dairy product
 - swabs
 - smears
 - propagation tissue
 - plant material
 - fermented foods
 - fermented beverages
 - Fresh animal tissue
 -

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principles of aseptic techniques

- growth requirements of microorganisms including bacteria and fungi in terms of their laboratory culture
- relationship between sterile practices, hygiene procedures and the ability to obtain samples free of contamination
- relationship between sterile practices and accurate test results
- importance of pure culture techniques and aseptic transfer to the successful microbiological investigation and correct interpretation of laboratory results
- cleaning and sanitising requirements of equipment and work area, and effects of physical and chemical agents on microbial growth and death
- requirements for handling specimens and processing samples for molecular analysis including nucleic acids and amplified specimens.
- principles of workflow isolation to minimise contamination
- sterilisation techniques, including:
 - flaming instruments and vessel openings
 - high temperature, boiling and autoclaving
 - membrane filtration
 - radiation, gas and/or chemical treatments
- disinfection and sterilisation procedures used in the collection, processing and safe disposal of samples and materials
- principles of infection control related to work health and safety (WHS), and sampling and transfer of materials in microbiological investigations including how to minimise the generation of aerosols when flaming
- relevant hazards and how to deal with the risks presented, including:
 - injuries from sharps, burners, molten agar
 - ultraviolet (UV) light sources
 - exposure to hazardous substances and/or infectious agents
- types and purpose of chemical and biological fume and safety cabinets
- environmental sustainability issues as they relate to the work task
- legal, ethical and WHS requirements specific to the work task.
-

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:
 - a standard laboratory
 - test samples
 - appropriate equipment, including:
 - transfer equipment
 - storage equipment
 - laminar flow units or biohazard cabinets as required

- swabs
- appropriate materials, including:
 - solid and/or liquid media
 - disinfecting agents
 - consumables
 - receptacles for safe disposal of wastes and for processing of reusable materials
- workplace schedules and procedures, safety data sheets (SDS) and documented safe work practices.

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>