



**Australian Government**

# **MSL973016 Perform aseptic techniques**

**Release: 1**

# MSL973016 Perform aseptic techniques

## Modification History

| Release   | Comments                                                                                                                                                                                                                                                                    |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Release 1 | <p>This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>.</p> <p>Supersedes and equivalent to MSL973004 Perform aseptic techniques. Changes to performance criteria. Range of conditions removed. Assessment requirements amended.</p> |

## Application

This unit of competency describes the skills and knowledge to perform aseptic techniques to maintain the integrity of both the sample source and the sample. It applies to sampling techniques in tissue culture and to generic microbiological 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.

## Pre-requisite Unit

Nil

## Competency Field

Testing

## Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

**1 Prepare for aseptic sampling or transfer**

- 1.1 Check the sampling procedure conforms with the required sampling plan
- 1.2 Use specified personal protective equipment (PPE)

| Elements describe the essential outcomes.                                              | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                        | <ul style="list-style-type: none"><li>1.3 Prepare the work area for safe and effective sample transfer</li><li>1.4 Select equipment and materials specified by the procedure</li><li>1.5 Organise equipment to minimise contamination during manipulations</li><li>1.6 Label containers for clear identification</li><li>1.7 Record details in relevant log or database</li><li>1.8 Macroscopically assess media and/or reagents to confirm sterility before use</li></ul>                                                                                                                                                                                                                        |
| 2 <b>Transfer materials aseptically</b>                                                | <ul style="list-style-type: none"><li>2.1 Protect the integrity of the sample source</li><li>2.2 Sterilise inoculating loops and/or pipette where used to prevent contamination</li><li>2.3 Perform transfer while minimising opportunities for contamination and cross-infection</li><li>2.4 Protect the integrity of the sample source and destination after transfer, and before sealing the transport or culture vessel</li><li>2.5 Re-sterilise inoculating loops, minimising the generation of aerosols as required</li><li>2.6 Perform quality control checks to confirm aseptic transfer was successful</li><li>2.7 Label transport or culture vessels for clear identification</li></ul> |
| 3 <b>Maintain work area and equipment to prevent cross-infection and contamination</b> | <ul style="list-style-type: none"><li>3.1 Place disposable and reusable items into relevant receptacles</li><li>3.2 Clean and disinfect work area and equipment after use</li><li>3.3 Transport disposable and reusable contaminated materials to relevant areas for disinfection, sterilisation and cleaning or disposal</li><li>3.4 Follow personal hygiene procedures</li></ul>                                                                                                                                                                                                                                                                                                                |

## 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

Equivalent to MSL973004 Perform aseptic techniques, Release 1.

## 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 MSL973016 Perform aseptic techniques

### Modification History

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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:

- safely and effectively performed aseptic techniques when performing at least 3 different types of sample transfers from the following list:
  - body fluids (or simulated body fluids)
  - sterile liquid culture media
  - water
  - soil
  - sterile pharmaceuticals
  - yeasts and moulds
  - milk and yoghurt
  - swabs and smears
  - propagation tissue
  - plant material
  - fermented foods
  - fermented beverages
  - bacterial cultures.

### Knowledge Evidence

There must be evidence the candidate has knowledge of:

- 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 growth 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
- sterilisation techniques:
  - flaming
  - 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:
  - injuries from sharps, burners, molten agar
  - ultraviolet (UV) light sources
  - exposure to hazardous substances and/or infectious agents
- awareness of 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, such as inoculating loops, pipettes (quantitative and qualitative), flasks, tubes and spatulas
    - Sterilisation equipment such as bunsen burners, bench incinerators, autoclave and/or pressure cooker
    - Storage equipment such as incubators, water baths, refrigerators, freezers, anaerobic jars as required
    - laminar flow units or biohazard cabinets as required
    - swabs
  - appropriate materials, including:
    - solid and/or liquid media
    - disinfecting and sterilising agents

- consumables
- receptacles for safe disposal of wastes and for processing of reusable materials
- bar coding material and labels
- workplace schedules, procedures and standard methods, SDS and documented safe work practices.

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

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