



**Australian Government**

# **MSL973001 Perform basic tests**

**Release: 1**

# MSL973001 Perform basic tests

## Modification History

Release 1. Supersedes and is equivalent to MSL973001A Perform basic tests

## Application

This unit of competency covers the ability to prepare samples and perform tests and measurements using standard methods with access to readily available advice from supervisors.

This unit of competency is applicable to laboratory/field assistants working in all industry sectors. In general, they do not calibrate equipment and make only limited adjustments to the controls. They do not interpret or analyse results or troubleshoot equipment problems.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

## Pre-requisite Unit

Nil

## Competency Field

Testing

## Unit Sector

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	<b>Interpret test requirements</b>	1.1	Review test request to identify samples to be tested, test method and equipment involved
		1.2	Identify hazards and workplace controls associated with the sample, preparation methods, reagents and/or equipment
2	<b>Prepare sample</b>	2.1	Record sample description, compare with specification, record and report discrepancies

- 2.2 Prepare sample in accordance with appropriate standard methods
- 3 **Check equipment before use**
  - 3.1 Set up test equipment in accordance with test method
  - 3.2 Perform pre-use and safety checks in accordance with workplace procedures and manufacturer instructions
  - 3.3 Identify faulty or unsafe equipment and report to appropriate personnel
  - 3.4 Check calibration status of equipment and report any out-of-calibration items to appropriate personnel
- 4 **Perform tests on samples**
  - 4.1 Identify, prepare and weigh or measure sample and standards to be tested
  - 4.2 Conduct tests in accordance with workplace procedures
  - 4.3 Record data in accordance with workplace procedures
  - 4.4 Perform calculations on data as required
  - 4.5 Identify and report out of specification or atypical results promptly to appropriate personnel
  - 4.6 Shut down equipment in accordance with operating procedures
- 5 **Maintain a safe work environment**
  - 5.1 Use established safe work practices and personal protective equipment (PPE) to ensure personal safety and that of other laboratory personnel
  - 5.2 Minimise the generation of wastes and environmental impacts
  - 5.3 Ensure safe disposal of laboratory and hazardous wastes
  - 5.4 Clean, care for and store equipment and reagents as required

## 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.

## Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

### **Standards, codes, procedures and/or workplace requirements**

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian and international standards covering the requirements for the competence of testing and calibration laboratories, laboratory safety and quality management
- national work health and safety (WHS) standards and codes of practice, and national measurement regulations and guidelines
- standard methods for basic tests
- workplace documents, such as standard operating procedures (SOPs); quality and equipment manuals; calibration and maintenance schedules; material safety data sheets (MSDS) and safety procedures; material, production and product specifications; production and laboratory schedules, workplace recording and reporting procedures; and waste minimisation and safe disposal procedures

### **Sample preparation**

Sample preparation processes include one or more of:

- sub-sampling or splitting using procedures, such as riffing, coning and quartering, manual and mechanical splitters
- diluting samples
- physical treatments, such as ashing, dissolving, filtration, sieving, centrifugation and comminution
- moulding, casting or cutting specimens

### **Typical basic tests carried out by laboratory/field assistants**

Typical basic tests carried out by laboratory/field assistants include, but are not limited to, one or more of:

- visual/optical tests of appearance, such as colour, texture, identity, turbidity and refractive index (alcohol content and Baume/Brix)
- physical tests, such as:

- density, specific gravity and compacted density
- moisture content and water activity
- particle size, particle shape and size distribution
- chemical tests, such as:
  - gravimetric, colorimetric, electrical conductivity (EC) and pH
  - specific ions using dipsticks and kits
  - nutrients (e.g. nitrates and orthophosphates) using kits
  - ashes, including sulphated ashes
- biological/environmental tests, such as:
  - pH, oxygen reduction potential (ORP), dissolved oxygen (DO) and EC
  - E coli using test kits, and surface hygiene/presence of microbes
- packaging tests, such as:
  - tearing resistance, bursting strength and impact resistance
  - permeability and/or leakage
- mechanical tests, such as:
  - Emerson class
  - concrete slump

## Measurements

Measurements include, but are not limited to, one or more of:

- simple ground surveys
- meteorological parameters, such as wind direction/strength, rainfall, maximum/minimum temperature, humidity and solar radiation
- simple background radiation survey
- production/process parameters, such as temperature, flow and pressure
- gas levels in a confined space

## WHS and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples
- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory

Departments of Health, where relevant

## **Unit Mapping Information**

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## **Links**

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>