



**Australian Government**

# **MSL973018 Prepare trial batches for evaluation**

**Release: 1**

# MSL973018 Prepare trial batches for evaluation

## 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 MSL973006 Prepare trial batches for evaluation. Foundation skill information added. Range of conditions removed. Assessment requirements amended.</p> |

## Application

This unit of competency describes the skills and knowledge to prepare trial batches of materials for evaluation. Materials can include soil, minerals and manufactured products, such as concrete, asphalt, food, plastics, paint and other industrial chemicals.

This unit applies to laboratory assistants working in all industry sectors. It describes work conducted by laboratory assistants, generally working under the guidance of a senior technician or laboratory supervisor/manager.

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 | <b>Prepare for trial batch mixing</b> | 1.1 | Identify the job, materials, appropriate procedures and safety requirements |
|   |                                       | 1.2 | Record description of the job to be undertaken, compare                     |

|                                           |                                                                                   |                                                                                                                                                 |                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes. |                                                                                   | Performance criteria describe the performance needed to demonstrate achievement of the element.<br>with specification and report any variations |                                                                                               |
|                                           |                                                                                   | 1.3                                                                                                                                             | Select and prepare tools, equipment and materials in accordance with job requirements         |
|                                           |                                                                                   | 1.4                                                                                                                                             | Confirm the properties and quantities of materials to be used                                 |
|                                           |                                                                                   | 1.5                                                                                                                                             | Confirm that the required materials are available and ready for use                           |
| 2                                         | <b>Mix trial batch for evaluation</b>                                             | 2.1                                                                                                                                             | Measure out quantities of materials ready for mixing                                          |
|                                           |                                                                                   | 2.2                                                                                                                                             | Mix the materials according to established procedures                                         |
|                                           |                                                                                   | 2.3                                                                                                                                             | Discharge the mixture ready for inspection and testing according to established procedures    |
|                                           |                                                                                   | 2.4                                                                                                                                             | Record details of the mix and any observations according to established procedures            |
| 3                                         | <b>Evaluate properties of the mixture by inspection and standard test methods</b> | 3.1                                                                                                                                             | Obtain representative samples of the mix for testing                                          |
|                                           |                                                                                   | 3.2                                                                                                                                             | Use established procedures and metrology concepts to perform specified tests and calculations |
|                                           |                                                                                   | 3.3                                                                                                                                             | Handle and transport samples in accordance with established procedures                        |
|                                           |                                                                                   | 3.4                                                                                                                                             | Label samples and record details in accordance with established procedures                    |
| 4                                         | <b>Clean equipment and dispose of materials</b>                                   | 4.1                                                                                                                                             | Clean mixing, measuring, sampling and testing equipment after use                             |
|                                           |                                                                                   | 4.2                                                                                                                                             | Return unused materials to storage                                                            |
|                                           |                                                                                   | 4.3                                                                                                                                             | Dispose of excess materials safely and ethically                                              |

| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element.                                                                                                                                                                                                                                                                        |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 <b>Maintain records</b>                 | 5.1     Record data in accordance with established procedures<br>5.2     Maintain equipment records in accordance with established procedures<br>5.3     Maintain confidentiality of workplace information                                                                                                                                                             |
| 6 <b>Maintain a safe work environment</b> | 6.1     Use established safe work practices and personal protective equipment (PPE) to ensure personal safety and that of other laboratory personnel<br>6.2     Minimise the generation of wastes and environmental impacts<br>6.3     Ensure safe disposal of laboratory and hazardous wastes<br>6.4     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.

- Numeracy skills to:
  - accurately measure, calculate and record batch quantities, concentrations and other relevant parameters
  - perform simple calculations for:
    - proportion, ratio and percentage for batch quantities
    - concentrations.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

## Unit Mapping Information

Equivalent to MSL973006 Prepare trial batches for evaluation, 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 MSL973018 Prepare trial batches for evaluation

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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 prepared and evaluated at least 3 different trial batches of materials.

## Knowledge Evidence

There must be evidence the candidate has knowledge of:

- concepts of metrology, including:
  - all measurements are estimates
  - measurements belong to a population of measurements of the measured parameters
  - precision, accuracy and significant figures
  - sources of error, uncertainty and repeatability
  - traceability
- international system of units (SI)
- nature of batch materials and products used in job role
- properties of mixing materials and how they affect the properties of the final product
- principles and importance of representative sampling
- principles of the standard test methods and specifications used for evaluating batch materials in job role
- workplace traceability requirements
- typical problems:
  - not following standard operating procedures (SOPs)
  - measurement errors
  - calculation errors
  - materials of unreliable quality

- insufficient mixing
- poor sampling procedures
- equipment breakdown and breakage
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (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 equipped with basic test equipment, common measuring instruments, materials, standard methods, workplace procedures, SDS and equipment manuals
  - samples
  - laboratory equipment, such as ovens; sieves; balances; volumetric measures and mixers; hand tools, shovels, scoops and spatulas; and consumables, including sample bags and labels
  - laboratory documentation: batch specifications and work instructions.

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

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