Australian Government

# MSL975012 Provide input to production trials

**Release: 1**

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

# MSL975012 Provide input to production trials

## Modification History

Release 1. Supersedes and is equivalent to MSL975012A Provide input to production trials

## Application

This unit of competency covers the ability to work closely with production personnel to conduct a routine trial to adjust formulations or develop products and processes following preliminary laboratory work. The unit covers monitoring critical process parameters, collecting and testing of samples, and analysing results. The unit does not cover the planning and management of the trial, development of product briefs or the troubleshooting of equipment and production processes.

This unit of competency is applicable to laboratory technicians and technical officers working in the manufacturing, biotechnology, construction materials, pharmaceutical and food processing industry sectors. All operations must comply with relevant standards, appropriate procedures and/or workplace requirements.

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

MSL974003 Perform chemical tests and procedures

**OR**

MSL974004 Perform food tests

**OR**

MSL974005 Perform physical tests

**OR**

MSL974010 Perform mechanical tests

## 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. | |
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| 1 | **Prepare for the trial** | 1.1 | Clarify trial objectives, specifications, documentation and reporting requirements |
| | | 1.2 | Identify the environmental, health, safety, and/or food safety hazards associated with the trial and the recommended control procedures |
| | | 1.3 | Determine the availability of resources and the need for any clearances, special safety and storage requirements |
| | | 1.4 | Review the recommended trial schedule to identify potential barriers/constraints and develop alternatives, as necessary |
| | | 1.5 | Communicate and confirm all laboratory requirements with plant operators and personnel in related work areas and functions |
| 2 | **Participate in the trial** | 2.1 | Reconfirm trial details with all relevant personnel |
| | | 2.2 | Identify any last minute changes and delays and make appropriate adjustments |
| | | 2.3 | Liaise closely with production personnel to conduct the trial safely and efficiently |
| | | 2.4 | Collect required product samples for laboratory analysis and/or reference |
| | | 2.5 | Monitor critical process parameters and record required data |
| | | 2.6 | Monitor data to identify problems, significant process variations and/or unacceptable product |
| | | 2.7 | Recommend changes to production processes as required |
| | | 2.8 | Leave plant in condition suitable for routine production to recommence |

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| 3 | **Assess and report trial outcomes** | 3.1 | Arrange for, or conduct, testing of product samples to check specifications |
| | | 3.2 | Analyse test results and relate properties of product samples to formulation details and processing methods |
| | | 3.3 | Identify and investigate out-of-specification or unacceptable outcomes, as required |
| | | 3.4 | Recommend possible modifications and/or opportunities for improvements within limits of role and responsibility |
| | | 3.5 | Document and report trial outcomes in accordance with workplace procedures |
| 4 | **Maintain a safe work environment** | 4.1 | Use established safe work practices and personal protective equipment (PPE) to ensure personal safety and that of other personnel |
| | | 4.2 | Minimise the generation of waste and environmental impacts |
| | | 4.3 | Ensure the safe collection of laboratory and hazardous waste for subsequent disposal |
| | | 4.4 | 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, quality and environmental management; sampling of materials and international system of units (SI)
- national work health and safety (WHS) standards and codes of practice, national environmental protection measures, and national measurement regulations and guidelines
- specific codes, guidelines and procedures, such as National Association of Testing Authorities (NATA) accreditation requirements, principles of good laboratory practice (GLP), Food Standards Australia New Zealand (FSANZ) Code and User Guides, Australian code of good manufacturing practice for medicinal products (GMP), and Therapeutic Goods Regulations 1009
- 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/formulation specifications; production and laboratory schedules; workplace recording and reporting procedures; waste minimisation and safe disposal procedures; maps and site plans
- workplace procedures for production trials

**Product properties, process stages and unit operations involved in the trial**

Product properties, process stages and unit operations involved in trials include, but are not limited to, one or more of:

- classification of samples (screening and sieving)
- milling
- mixing
- separation (distillation, sieves, filtration, solvent extraction and chromatography)
- drying
- concentrating
- diluting
- depositing (injecting, forming and extrusion)
- retorting

- cooling, freezing, refrigeration and heat transfer
- closure (vacuum sealing)
- weighing and packaging
- materials handling and transport, and warehousing

**Trial specifications**

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

- product specifications
- recipe/formulations
- processing parameters
- trial size, production target and timeline
- trial schedule and resources required
- required product samples and tests
- analysis of relevant WHS, food safety and environmental hazards and controls
- storage requirements

**Safe work practices**

Safe work practices include, but are not limited to, one or more of:

- following all safety requirements on the production floor
- ensuring access to service shut-off points
- recognising and observing hazard warnings and safety signs
- labelling of samples, reagents, aliquoted samples and hazardous materials
- handling and storage of hazardous materials and equipment in accordance with labelling, MSDS and manufacturer instructions
- identifying and reporting operating problems or equipment malfunctions
- cleaning and decontaminating equipment and work areas regularly using workplace procedures
- using PPE, such as hard hats, hearing protection, gloves, safety glasses, coveralls, gowns, body suits, respirators and safety boots
- machinery guards
- signage, barriers, flashing lights and traffic control
- reporting abnormal emissions, discharges and airborne contaminants, such as noise, light, solids, liquids, water/wastewater, gases, smoke, vapour, fumes, odour and particulates, to appropriate personnel

**WHS and environmental**

WHS and environmental management requirements include:

- complying with WHS and environmental management

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| **management requirements** | requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time<br>• applying standard precautions relating to the potentially hazardous nature of samples<br>• 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

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