



Australian Government

MSL943001 Work safely with instruments that emit ionising radiation

Release: 1

MSL943001 Work safely with instruments that emit ionising radiation

Modification History

Release 1. Supersedes and is equivalent to MSL943001A Work safely with instruments that emit ionising radiation

Application

This unit of competency covers the ability to safely store, transport and operate instruments that emit ionising radiation following established safe work practices and in accordance with laboratory procedures and licensing requirements. Examples include, use of process control instrumentation, such as fluid level gauges using radioactive sources, on-site non-destructive testing of weldments using X-ray and gamma ray sources and density testing of asphaltic concrete.

This unit of competency is applicable to laboratory or field assistants working in construction materials testing or similar industry sectors. They work under supervision or direction of paraprofessionals.

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

Work health and safety

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 | Store instruments safely and securely | 1.1 | Identify state or territory requirements for storage facilities and associated document processes |
| | | 1.2 | Store instruments in accordance with state or territory requirements and documented procedures |
| | | 1.3 | Secure instruments to prevent unauthorised access |
| | | 1.4 | Record instruments' movements and usage in accordance with documented procedures |
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| 2 | Transport instruments safely and securely | 2.1 | Select vehicle suitable for the purpose |
| | | 2.2 | Attach regulation signage in accordance with state or territory requirements to indicate that radioactive sources are being carried |
| | | 2.3 | Ensure that instruments are properly located and fixed securely in place |
| | | 2.4 | Ensure security of instruments when the vehicle is unattended |
| | | | |
| 3 | Use instruments safely and maintain security | 3.1 | Follow safe working practices to minimise own exposure to radiation |
| | | 3.2 | Use radiation dosimeter to monitor own exposure to radiation |
| | | 3.3 | Follow safe work practices to minimise exposure of others to radiation |
| | | 3.4 | Follow safe work practices to protect the instrument from damage |
| | | 3.5 | Maintain instrument security |

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| 4 | Monitor radiation levels | 4.1 | Check operation and calibration status of radiation survey meter |
| | | 4.2 | Perform radiation survey following documented procedure |
| | | 4.3 | Report atypical conditions and/or problems to appropriate personnel |
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| 5 | Maintain records | 5.1 | Record observations, data and results in accordance with workplace procedures |
| | | 5.2 | Maintain confidentiality of workplace information |
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| 6 | Perform emergency procedures | 6.1 | Identify potential emergency situations |
| | | 6.2 | Respond to emergencies in accordance with documented procedures |
| | | 6.3 | Report emergency situations to appropriate personnel |

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 of more of:

- Australian and international standards covering the competence of testing and calibration laboratories; and safety, such as *AS 2243.4-1998 Safety in laboratories - Ionising radiations*
- national standards and codes of practice for work health and safety (WHS), and national environment protection measures
- registration/licensing and/or National Association of Testing Authorities (NATA) accreditation requirements, and radiation licensing requirements
- Australian and international standards, codes and guidelines covering measurement management, accuracy of measurement methods and results, expression of uncertainty, principles of good laboratory practice (GLP), Australian Dangerous Goods Code, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Codes of Practice, and National Health and Medical Research Council (NHMRC) Guidelines
- workplace documents, such as standard operating procedures (SOPs); equipment manuals and warranties; calibration and maintenance schedules; material safety data sheets (MSDS) and safety procedures; material, production and product specifications; production and laboratory schedules; and recording and reporting procedures

Instruments that emit ionising radiation

Instruments that emit ionising radiation include, but are not limited to, one or more of:

- soil moisture and density gauges
- borehole logging probes
- fluid density and level detectors
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Atypical conditions and problems

Atypical conditions and problems include, but are not limited to, one or more of:

- incidents during transportation
- on-site accidents and fire
- jamming of the source rod in the exposed position
- theft of equipment containing radioactive sources
- keeping other personnel clear of instrument

- instrument breakdown

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

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