



Australian Government

MSL943003 Work safely with instruments that emit ionising radiation

Release: 1

MSL943003 Work safely with instruments that emit ionising radiation

Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL943001 Work safely with instruments that emit ionising radiation. Range of conditions removed. Assessment requirements amended.

Application

This unit of competency describes the skills and knowledge 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 applies to laboratory or field assistants working in construction materials testing or similar industry sectors. They work under supervision or direction of paraprofessionals.

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

Work health and safety

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
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
4	Monitor radiation levels	4.1	Check operation and calibration status of radiation survey meter
		4.2	Perform radiation survey following documented

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	procedure
	4.3 Report atypical conditions and/or problems to appropriate personnel
5 Maintain records	5.1 Record observations, data and results in accordance with workplace procedures
	5.2 Maintain confidentiality of workplace information in accordance with workplace procedures
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.

Unit Mapping Information

Equivalent to MSL943001 Work safely with instruments that emit ionising radiation, 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 MSL943003 Work safely with instruments that emit ionising radiation

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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 handled, stored and transported at least 1 instrument that emits ionising radiation in accordance with established safe work practices, laboratory procedures and licensing requirements
- safely checked the operation and calibration status of at least 1 instrument that emits ionising radiation and then operating it to conduct a radiation survey.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- radiation concepts and principles, including nature of radiation; different types of radiation, their characteristics, sources and shielding methods; radiation intensity; physiological effects of ionising radiation; external radiation protection and practical methods of minimising radiation exposure
- methods of measuring and detecting ionising radiation
- function of key components, pre-use and calibration status checks and safe operating procedures for the instrument used
- work health and safety (WHS) and emergency procedures for safe handling of radiation sources and working with the instrument used
- critical elements of radiation safety
- instruments that emit ionising radiation
- atypical conditions and problems that present when working with instruments that emit ionising radiation
- Australian and international standards for the competence of testing and calibration laboratories; and safety, such as AS 2243.4-1998 Safety in laboratories - Ionising radiations

- specific industry codes and guidelines:
 - Australian Dangerous Goods Code
 - Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Codes of Practice
- registration/licensing and/or National Association of Testing Authorities (NATA) accreditation requirements, and radiation licensing requirements
- 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:
 - instruments that emit ionising radiation and radiation monitors/dosimeters and associated equipment, such as battery chargers
 - documentation, including user manuals, workplace safety procedures and test/survey methods
 - radiation warning signs and barriers
 - storage areas for nuclear sources.

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

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