

SEMLATA14 - H00E 04

Prepare scientific or technical samples for testing activities



Overview

This unit covers the competences you need to prepare scientific or technical samples for testing, in accordance with approved procedures and practices. You will be expected to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. You will be expected to complete tasks and procedures and exercise autonomy and judgement subject to overall direction or guidance. You will be required to work to the relevant workplace procedures, legislation and organisational policy, and to use good scientific or technical techniques and practices.

On completion of workplace activities, you will be required to show you have completed well-defined, generally routine tasks and can address straightforward problems, selecting and using the relevant scientific or technical skills and procedures. You will be expected to show you have identified, gathered and used relevant information to inform your actions and identify how effective these have been.

Your responsibilities will require you to comply with organisational policy and procedures for the scientific or technical activities undertaken, and to report any problems with the activities, materials or equipment that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will work under a team leader, whilst taking responsibility for your own actions in the completion of tasks and procedures, whilst exercising a degree of autonomy and judgement. You will also be responsible for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of scientific or technical facts, procedures and ideas to complete well-defined tasks and address straightforward problems in the workplace. You will have an understanding of the workplace process used, and its application, and will know about the scientific or technical equipment, materials and consumables in adequate depth to provide a sound background for carrying out the activities to the required specification. You will know how to interpret workplace information and ideas and be aware of the types of resources that are relevant to these scientific or technical activities.

You will understand the safety precautions required when carrying out the scientific or technical activities. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

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Performance criteria

- You must be able to:*
- P1 ensure that your work is carried out in accordance with workplace procedures
 - P2 use safe practices and the appropriate personal protection equipment (PPE) when doing scientific or technical activities
 - P3 ensure that you establish the identity of the sample and check it's integrity
 - P4 confirm the relevant controlled conditions for sample preparation are present
 - P5 prepare samples for scientific or technical testing in accordance with workplace procedures
 - P6 identify and store test samples correctly until required
 - P7 deal with any waste material in accordance with workplace procedures
 - P8 work safely at all times, complying with health and safety, environmental and other relevant regulations and guidance
 - P9 communicate the required information laboratory activities to authorised people in accordance with departmental and organisational procedures

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Knowledge and understanding

You need to know and understand:

- K1 the health and safety requirements of the area in which you are carrying out the scientific or technical activities
- K2 the implications of not taking account of legislation, regulations, standards and guidelines when conducting scientific or technical activities
- K3 the scientific or technical techniques and processes you must use correctly in the workplace.
- K4 the importance of wearing protective clothing, gloves and eye protection for scientific or technical activities
- K5 the importance of correct identification, and any unique workplace coding system
- K6 the lines of communication and responsibilities in your department, and their links with the rest of the organisation
- K7 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K8 what methods of sample preparation to use
- K9 why the right sample preparation conditions are important
- K10 how to control sample preparation conditions
- K11 how to check integrity and identity of samples prepared
- K12 the types of sample and container used for transport and scientific or technical testing
- K13 the types of equipment used to prepare samples
- K14 why it is important to carry out pre-use check and identify the status of equipment before it is used to prepare samples
- K15 how to load and unload equipment used in sample preparation
- K16 the procedure to be followed when samples do not match up with the accompanying documentation
- K17 the procedure to be followed when a broken or leaking sample is identified in the workplace
- K18 the procedure to be followed if a hazardous or high risk sample was received in the workplace
- K19 the methods used for numbering and labelling samples in the workplace
- K20 the procedures for storing prepared samples when archiving is required
- K21 the factors which might adversely affect the integrity of the sample during storage or transport

Additional Information

Scope/range related to performance criteria

You must be able to:

1. Check sample integrity against **two** of the following factors:
 - 1.1. defects
 - 1.2. damage
 - 1.3. decomposition
 - 1.4. homogeneity
 - 1.5. other (please specify)

2. Prepare samples using **two** of the following methods:
 - 2.1. grinding
 - 2.2. pulverising
 - 2.3. dividing
 - 2.4. mixing
 - 2.5. centrifuging
 - 2.6. filtering/sieving
 - 2.7. diluting
 - 2.8. weighing
 - 2.9. hydrating
 - 2.10. siphoning
 - 2.11. other (please specify)

3. Check **two** of the following controlled conditions:
 - 3.1. health and safety environment
 - 3.2. time
 - 3.3. recording system
 - 3.4. cleanliness
 - 3.5. external influence giving rise to variations

4. Record and communicate details of the work done, to the appropriate people, using:
 - 4.1. verbal report

Plus **one** method from the following:

 - 4.2. written or typed report
 - 4.3. specific workplace documentation
 - 4.4. computer-based record
 - 4.5. electronic mail

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Developed by	SEMTA
Version number	1
Date approved	May 2010
Indicative review date	May 2012
Validity	Current
Status	Original
Originating organisation	SEMTA
Original URN	Unit 14
Relevant occupations	Professional Occupations; Science Professionals; Science and mathematics; Science; Laboratory Technician; Agricultural Scientist
Suite	Laboratory and Associated Technical Activities Suite 2; Agricultural Crop Production
Key words	Laboratory; technical; LATA; scientific; testing; samples; activities; integrity; prepare; defects; controlled; conditions