
Overview

This standard covers the skills you need to carry out laboratory sample analysis using a light microscope. This will involve preparing biological materials for viewing. It will involve setting up and operating the microscope, viewing and recording samples. You must work to the relevant standard operating procedures, legislation and organisational policy.

You must carry out all the necessary preparations which will include preparing the work area so that it is a safe condition to carry out the procedure and ensuring that materials equipment and other resources that you need, are available and in a safe and useable condition. After the procedure you must dispose of any waste appropriately, leave your work area in an acceptable condition and complete all the necessary paperwork and documentation.

Your underpinning knowledge will provide a good understanding of your work to allow you to carry out the activities to the required specification.

Who this standard is for

The standard is recommended for more experienced laboratory staff.

**Performance
criteria**

- You must be able to:
- P1 ensure that your work is carried out in accordance with workplace procedures
 - P2 prepare the biological/compound material according to defined procedures
 - P3 load samples for analysis onto the microscope carefully, using low power, ensuring that the field of view is focused carefully without damage to the sample or objective lenses
 - P4 use standard size markers and selective stains or probes to measure, quantify and identify samples
 - P5 store preparative samples in the correct location for storage, further preparation or analysis
 - P6 prepare, maintain and use equipment and materials in accordance with manufacturers' instructions and local safety regulations
 - P7 communicate the required information about the work done, to authorised people, in accordance with departmental and organisational procedures

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 activities
- K2 the scientific or similar techniques and processes you must use correctly in the workplace
- K3 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K4 the importance of using the correct identification and any unique organisational or laboratory numbers for specimens/samples
- K5 the types of handling, sorting, recording and tracking system used and the procedures used for transferring specimens/samples within the laboratory while undergoing processing
- K6 the minimum size/volume of laboratory sample required for microscope slide preparation laboratory investigation
- K7 the common errors that may occur in sample preparation and how to avoid them
- K8 the range of samples analysed, the containers used for storage and analysis and other essential resources
- K9 the importance of a clean and tidy work area and avoidance of cross-contamination of samples
- K10 the cleaning and maintenance of microscopes after use and the harmful effects of using incorrect cleaning materials
- K11 the main features and various types and functions of the light microscope, how to calculate and record magnification and the difference between magnification and resolution
- K12 the underlying action and expected outcome of the reagents, stains and dyes involved in sample preparation
- K13 the procedures to be followed when dealing with broken or leaking samples and disposing of harmful chemical and contaminated equipment

COGLS317

Analysing samples using light microscopy in life sciences and related industries



Developed by	Cogent
Version number	1
Date approved	October 2013
Indicative review date	October 2018
Validity	Current
Status	Original
Originating organisation	Cogent
Original URN	COGLS317
Relevant occupations	Associated Professionals and Technical Occupations; Science and Mathematics; Science; Science and Engineering Technicians; Professional Occupations; Science Professionals
Suite	Life Sciences and Related Industries 3
Key words	Light microscope; field of view; preparation; biological; viewing setting up
