
Overview

This standard is about analysing samples using a Gas Chromatography (GC) system. You will be expected to be able to set up the system for the analysis, ensure that the samples are ready for analysis, load and run all samples, obtaining all necessary results. You will be expected to initiate and complete tasks and procedures exercising a degree of autonomy and judgement within specified parameters. You will also be aware of the limits of your authority and the procedures to follow if you need help or advice.

Gas Chromatography (GC) systems are routinely used in many organisations. As with many scientific instruments a competent technician can ensure that high quality analytical results are consistently obtained.

You will to comply with organisational policy and procedures for the scientific or technical activities undertaken. You will be expected to run the GC system using methods that have already been developed. You will also be expected to carry out routine maintenance. You are not expected to be developing new methods.

Who this standard is for

The standard is recommended for more experienced laboratory staff possibly staff who are about to complete an apprenticeship.

**Performance
criteria**

- You must be able to:
- P1 ensure that your work is carried out in accordance with workplace procedures
 - P2 ensure that you follow the recommended operating procedures for the instrument you are using
 - P3 confirm the instrument is calibrated and ready for use
 - P4 start up and prepare the instrument ready for use
 - P5 load all samples for analysis, running all sequences correctly
 - P6 deal promptly and effectively with any error messages or equipment faults, that you can resolve reporting any that cannot
 - P7 Obtain all results, ensuring that they are to the required standard
 - P8 Carry out routine maintenance on the instrument
 - P9 Shut down the instrument, ensuring that is ready for further work
 - P10 Communicate the required information about the work done to the appropriate people

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 legal and regulatory frameworks within which you are working and the implications of failing to comply with either
- K3 the limits of your own authority and to whom you should report if you have problems that you cannot resolve
- K4 the main components of a GC system and the range of options available
- K5 the range of samples analysed, the volume required and the appropriate containers for introducing them into the instrument
- K6 the sample handling procedures used with the organization and what to do with a faulty sample
- K7 the key features of the instrument that you can change to improve analysis
- K8 the maintenance procedures for the GC system
- K9 the common error messages and how to deal with them
- K10 how to interpret the output from the system
- K11 how to determine key data such as column efficiency, response factor, symmetry of a peak
- K12 how to interrupt and restart the programme if required
- K13 the document control and reporting procedures that should be used

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