
Overview

This standard is about the preparation of reagents for use in life sciences and related industries. Many of the reagents will be solutions which you may have to prepare from solids or by diluting a more concentrated solution. You will be expected to work in a safe and efficient manner, following laid down methods to accurately prepare the required reagents. You be expected to understand the level of accuracy required in each case.

Accurate preparation of starting materials is essential particularly in any analytical procedure. If standard solutions are not prepared to the required accuracy, then any results taken after that will be invalid.

While you are expected to be able to follow laid down procedures and to carry out some basic calculations, you will not be responsible for developing experimental methods.

Who this standard is for

The standard is recommended for all lab staff particularly new recruits.

**Performance
criteria**

- You must be able to:
- P1 ensure that your work is carried out in accordance with workplace procedures
 - P2 select the correct balance to use depending on the accuracy required
 - P3 use balances for accurately weighing out materials
 - P4 select the appropriate glassware for the measurement of volumes of liquid depending on the accuracy required
 - P5 measure accurately specific volumes of liquids
 - P6 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 legal and regulatory frameworks within which you are working and the implications of failing to comply with either
- K3 the correct procedures for the work you are carrying out
- K4 the correct procedures for reporting any problems you encounter when following a procedure
- K5 the range of balances used in the laboratory and the main purpose of each
- K6 the range of volumetric glassware used in a laboratory
- K7 and the main purpose of each
- K8 how to choose the appropriate measuring equipment
- K9 for the scale, accuracy and precision required for the task
- K10 calculations from moles to mass and vice versa
- K11 calculations involving concentration of solution including converting between different units
- K12 calculation of dilution factors
- K13 how to clean and maintain weighing and measuring equipment (such as pipettes, balances)

Developed by	Cogent
Version number	1
Date approved	October 2013
Indicative review date	October 2018
Validity	Current
Status	Original
Originating organisation	Cogent
Original URN	COGLS206
Relevant occupations	Associated Professionals and Technical Occupations; Science and Mathematics; Science; Science and Engineering Technicians; Professional Occupations; Science Professionals
Suite	Life Science and Related Industries 2
Key words	Preparation; reagents; solutions; solids; safety