

18.1 Introduction

Quality assurance in analytical chemistry covers the quality assurance and quality control of the procedure for the determination of analytes in various matrices, from sampling until the evaluation step of the procedure used and the presentation of results. For the qualification of the processes, quantifiable performance characteristics are used. As standard analytical procedures only those can be accepted for which performance characteristics fulfil quality requirements.

The work of the analytical laboratories can be also tested and qualified (or classified) according to the values of the performance characteristics of the produced analytical results.

For accurate comparison of the analytical measurements reference materials are necessary, whose composition must be known or determined with acceptable certified accuracy.

Correspondingly to the above mentioned topics and requirements this chapter include the following points: selected general terms concerned with measurements; sampling; performance characteristics of analytical processes; calibration and standardisation; within laboratory and interlaboratory studies; reference materials.

Because some of the performance characteristics must be considered in the presentation of analytical results, there are terms which are presented both in Chapter 2 and Chapter 18 and are also used in those chapters which are method oriented.

The relevant papers used for this chapter are summarised at the end of this Chapter in Section 18.9.

For the fundamental terms concerning quality assurance and internal quality control of analytical measurements see section 18.6.