

Preface to the Second Edition

In the more than 10 years since the appearance of the first edition of this book, analytical chemistry has not only undergone enormous scientific development due to technological progress but has witnessed a broadening in its range of applications, and has in part become a service that extends beyond its traditional boundaries. In parallel, awareness of the quality of analytical results has also increased. First, existing quality assurance systems were certified in some areas of analysis on the basis of the international quality management standards of the ISO 9000 series. These standards were originally created to increase the quality in goods production. Certification ensures that a quality assurance system exists and that tests are carried out in compliance with that system. However, an evaluation of the technical competence for the execution of specific tests did not take place thereafter. The special requirements for the technical competence of testing laboratories were accommodated in the mid-1990s through the introduction of accreditation in the quality standards based on the ISO Guide 25 “General Requirements for the Technical Competence of Calibration and Testing Laboratories” – implemented in Europe in 1994 through the standard series EN 45001 ff. This accreditation signified the confirmation not only of the conformity to particular technical rules, but also the efficacy of the laboratory by an impartial third party. In the meantime, the standard EN 45001 has been replaced by the ISO/IEC standard 17025 “General Requirements for the Technical Competence of Calibration and Testing Laboratories”, which is recognized worldwide.

The procedures of analytical quality assurance described in the first edition of this book have worked satisfactorily in practice, and have now been further developed and amended. For the indication of an analytical result, the earlier (pre-1990) and mostly unfamiliar term “confidence interval” has been extended in content and renamed “measurement uncertainty”. Triggered by the rising costs of the service of “analysis”, the “equivalency” of faster, automated, more economical analytical procedures in comparison with reference procedures has taken on greater meaning.

This second edition accommodates all of these new requirements of quality assurance. To provide concrete assistance during day-to-day work in the laboratory, checklists and the elaborated mathematical examples in the Appendix are also available as Excel tables on the attached CD.

We would like to dedicate this second edition to Professor Werner Funk, who sadly passed away much too early, in 1996.

Gießen, August 2006

*Vera Dammann
Gerhild Donnevert*

Preface to the First Edition

When the German edition of “Quality Assurance in Analytical Chemistry” appeared in 1992, it was quickly accepted by analysts as a textbook on analytical quality assurance (AQA) and analytical quality control (AQC).

However, AQA and AQC have obtained higher importance since then. In recent years an increasing number of laboratories have applied for accreditation according to EN 45000 series. Quality management and quality assurance systems according to ISO 9000 ff are now certified in analytical laboratories – the “producers” of analytical results – too.

These latest trends were taken into consideration in this revised and updated English version. Some chapters were expanded and new ones were added. Moreover, some mistakes in the sample calculations (Appendix 1) were corrected.

The authors wish to thank the VCH Publishers for the support of this work and especially Mrs. Ann Gray for the competent translation of this book.

Gießen, June 1995

V. Dammann
G. Donnevert
W. Funk