
International Standard



78/3

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**Chemistry — Layouts for standards —
Part 3: Standard for molecular absorption spectrometry**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 78/3 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in March 1982.

It has been approved by the member bodies of the following countries:

Australia	Germany, F.R.	Portugal
Austria	Hungary	Romania
Belgium	India	South Africa, Rep. of
Brazil	Italy	Sri Lanka
China	Korea, Rep. of	Switzerland
Czechoslovakia	Mexico	Thailand
Egypt, Arab Rep. of	New Zealand	USSR
France	Poland	

The member body of the following country expressed disapproval of the document on technical grounds:

Netherlands

Chemistry — Layouts for standards — Part 3: Standard for molecular absorption spectrometry

0.1 Introduction

The products dissolved in a solution analysed by methods using molecular absorption spectrometry, the principles of the methods adopted and the operating conditions employed are extremely varied. Thus, the solutions on which the spectrometric measurements are made vary greatly in composition. The absorbance of any one of these solutions is generally equal to the sum of the characteristic absorbances of the various constituents.

The principle of each method of analysis using molecular absorption spectrometry consists of judiciously selecting the composition of solutions which will be measured so that the value of the characteristic absorbance due to each constituent to be determined can be obtained by difference.

0.2 Scope and field of application

This part of ISO 78 establishes a layout for standard methods of analysis using molecular absorption spectrometry for examining solutions in the visible and near ultra-violet regions, and gives some recommendations for their presentation and wording.

The layout itself is preceded by a clause "Terminology and definitions", which supplements the information given in ISO 6286. It is followed by a section "Notes on the application of the layout for a standard method of analysis by molecular absorption spectrometry", which deals with the wording of clauses and sub-clauses used in the layout.

0.3 References

ISO 78/2, *Layouts for standards — Part 2: Standard for chemical analysis*.

ISO 6286, *Molecular absorption spectrometry — Vocabulary — General — Apparatus*.

0.4 Terminology and definitions

0.4.1 set of calibration solutions: A set of reference solutions having different concentrations of the constituent to be determined.

Each member of the set:

- is prepared without addition of the sample submitted for analysis;¹⁾
- contains a known quantity of the constituent to be determined;
- is prepared in such a way that the presence of the constituent to be determined is shown by a detectable absorption and an absorption of the same magnitude as the sample solution.

NOTE — The member of the set in which the quantity of the constituent to be determined intentionally added is zero, is called the zero member.

0.4.2 test solution: A solution made up from a test portion of the sample submitted for analysis and prepared in such a way that the presence of the constituent to be determined is shown by an absorption.

0.4.3 blank test solution: A solution prepared in the same way as the test solution, but so that it does not contain the constituent to be determined. With this intention, the test portion used for making up the test solution is

- replaced by an equal quantity of sample which has been treated in such a way as to ensure that the constituent to be determined is totally absent from it, without its other characteristics being changed, or
- replaced by an equal quantity of a substance, whose the composition is apart from the absence of the constituent to be determined, identical or very similar to that of the sample, or,
- replaced by a substance which is inert under the conditions of the determination (water for example) and which does not contain the constituent to be determined, or
- simply omitted.

NOTE — The particular procedures must be based on a selection from these four possibilities.

1) In methods based on the addition technique however, each member of the set contains the sample submitted for analysis, and in this case the zero member corresponds to the sample solution.