
Surface chemical analysis — Information format for static secondary-ion mass spectrometry

*Analyse chimique des surfaces — Protocole de l'information pour la
spectrométrie de masse des ions secondaires (SIMS) en mode statique*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2004

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms, definitions and conventions	1
4 Symbols (and abbreviated terms)	1
5 Description of information format	2
5.1 General	2
5.2 Additional rules and definitions	3
5.3 The format	4
5.3.1 Content of the information format	4
5.3.2 Definition of items in the format	5
Annex A (informative) Examples of formatted data	7
A.1 Example of data acquired using a time-of-flight mass spectrometer	7
A.2 Example of data acquired using a magnetic sector mass spectrometer	8
A.3 Example of data acquired using a quadrupole mass spectrometer	8
Bibliography	10

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22048 was prepared by Technical Committee ISO/TC 201, *Surface chemical analysis*, Subcommittee SC 3, *Data management and treatment*.

Introduction

ISO 14976 provides a digital data transfer format for surface chemical analysis. That format provides basic information about the data acquisition, but data required for calibration does not specifically include certain detailed aspects necessary to interpret static secondary-ion mass spectrometry (static SIMS) data. That format also contains the spectral data and information about the abscissa increment and its value in the spectrum. Additional data, such as the mass scale calibration data are assembled into information packages with a defined format to be transmitted either within a file conforming to ISO 14976 or separately. In this way, information formats for AES and XPS have been defined in ISO 14975^[1]. For static SIMS, it is important to be able to store and transfer the data, as acquired, for instance using the time-of-flight time scale. Each spectrum then needs associated calibration parameters to convert the time scale to a mass scale, where the mass increment in the spectrum varies with mass. The information format defined here contains these data and can be inserted into the block comment lines of ISO 14976. This format is designed to work with ISO 14976 in such a way that software designed to read the latter functions correctly with this information package added. This International Standard is therefore supplementary to and compatible with ISO 14976. The format is also compatible with ISO 14975 and follows a similar structure.

