
**Textiles and textile products —
Determination of organotin
compounds —**

**Part 2:
Direct method using liquid
chromatography**

*Textiles et produits textiles — Détermination des composés
organostanniques —*

Partie 2: Méthode directe utilisant la chromatographie en phase liquide



This document is a preview generated by EUS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Reagents	2
6 Apparatus and materials	2
7 Preparation of the test sample	3
8 Procedure	3
8.1 General	3
8.2 Preparation of the extraction solvent (250 mg/l of tropolone in methanol/ethanol mixture)	3
8.3 Preparation of standard solution	3
8.3.1 General	3
8.3.2 Internal standards — Stock solution (1 000 mg/l of organotin cation)	4
8.3.3 Internal standards — Working solution (2 mg/l of organotin cation)	4
8.3.4 Standards — Stock solution (1 000 mg/l of organotin cation)	4
8.3.5 Standards — Working solution (10 mg/l of organotin cation)	4
8.4 Sample extraction	5
8.5 Sample analysis	5
9 Expression of results	6
9.1 Calibration curve	6
9.2 Calculation	6
9.3 Reliability of the method	7
10 Test report	7
Annex A (informative) Example of chromatographic condition	8
Annex B (informative) Example of calibration preparation	10
Annex C (informative) Reliability of the method	11
Bibliography	12

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 22744 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Textiles and textile products — Determination of organotin compounds —

Part 2:

Direct method using liquid chromatography

WARNING — The use of this document involves hazardous materials. It does not purport to address all of the safety or environmental problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel and the environment prior to application of the document.

1 Scope

This document specifies a test method for the qualification and quantification of organotin compounds. This test method is applicable to all types of materials of textile products.

NOTE CEN/TR 16741 defines which materials are applicable to this determination.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4787, *Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Principle

The organotin compounds are extracted from the material of a textile product with a methanol-ethanol mixture using tropolone as a complexing agent. The mono- and di-organotin-tropolone complexes and tri-organotin cations formed in the extraction procedure are directly analysed by a liquid chromatograph with a tandem mass spectrometer (LC-MS/MS). This method does not require additional derivatization step.

[Table 1](#) indicates the list of organotin compounds which can be analysed with this document.

This document is also applicable for further organotin compounds provided that the method is validated with the additional compounds.