
**Textiles and textile products —
Microplastics from textile sources —**

**Part 1:
Determination of material loss from
fabrics during washing**

Textiles et produits textiles — Microplastiques d'origines textiles —

Partie 1: Détermination des pertes de matière des étoffes pendant le lavage



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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 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.

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A list of all parts in the ISO 4484 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.

Introduction

There is significant evidence that during laundering of textiles, release of fragments can occur. The purpose of this document is to provide a method of assessment, to be used in laboratories, of the degree to which different fabrics shed fibres and fibre fragments of all types. The results obtained by using this document should enable manufacturers of textile articles to make an informed choice about the type of fabric to use to reduce/minimize shedding as well as to test different methods of manufacture that minimize material loss during laundering.

Textiles and textile products — Microplastics from textile sources —

Part 1: Determination of material loss from fabrics during washing

1 Scope

This document describes a method for systematically collecting material loss from fabrics under laundering test conditions to achieve comparable and accurate results. There is no direct correlation to material loss during domestic and commercial laundering. The method is designed to assess material loss of all types.

NOTE In this document, any collected debris is assumed to be fibre fragments. For the identification of the nature/composition of this debris, the method described in ISO 4484-2 can be used.

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 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 4915, *Textiles — Stitch types — Classification and terminology*

ISO 4916, *Textiles — Seam types — Classification and terminology*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

4 Principle

The test specimen is subjected to an accelerated laundering process under conditions of temperature, time, and mechanical action. The resultant wash liquor is vacuum filtered. Material loss is assessed gravimetrically to approximate material loss during simulated domestic laundering. The ratio of the mass of the material loss by the test specimen mass is then reported.

Note Consideration on detergent can be found in [A.1](#).

5 Reagents

5.1 Water, distilled or grade 3 according to ISO 3696.