International Standard

ISO 17191

Urine-absorbing products for incontinence — Measurement of airborne respirable polyacrylate superabsorbent materials — Determination of dust in collection cassettes by sodium atomic absorption spectrometry

Produits pour absorption d'urine — Dosage des particules respirables de matériaux superabsorbants de polyacrylate en suspension dans l'air — Dosage de la poussière dans des cassettes par spectrométrie à absorption atomique du sodium

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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).

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This document was prepared by Technical Committee ISO/TC 173, *Assistive products*, Subcommittee SC 3, *Products for ostomy and incontinence*.

This second edition cancels and replaces the first edition (ISO 17191:2004), which has been technically revised.

The main changes are as follows:

— clarification of test procedures.

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.

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Introduction

This document was originally developed by the European Nonwovens Association (EDANA) as one of an eleven-part series of test methods. It specifies a test method for determining the amount of airborne dust emanating from polyacrylate superabsorbent material. The other test methods in the original EDANA series have been transformed into International Standards as the ISO 17190 series [1]. The documents in the ISO 17190 series [1] series differ from this document in that they cover test methods for the characterization of polymer-based absorbent materials.

This test method has been in practical use for several years, and has proven to be reliable with respect to common criteria of quality of test methods (validity, repeatability, etc.).

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Urine-absorbing products for incontinence — Measurement of airborne respirable polyacrylate superabsorbent materials — Determination of dust in collection cassettes by sodium atomic absorption spectrometry

1 Scope

This document specifies a method for the determination of polyacrylate (PA) superabsorbent materials in airborne dust by measurement of sodium (Na) by atomic absorption spectrometry (AAS).

This method is applicable to the determination of collected superabsorbent powder in the range between 0,2 µg and 60 µg (limit of detection near 0,2 µg) of superabsorbent powders.

It is applicable to polyacrylate superabsorbent materials, which occur in hygiene products including urine-absorbing aids for incontinent persons. The test methods are addressed to the material exclusively. They are not intended to be used, and are not applicable for use, with finished manufactured urine-absorbing aids.

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*

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:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Principle

Atomic absorption analysis (AAS) is used to determine the sodium content in polyacrylate (PA) superabsorbent powders collected in air-monitoring cassettes.

PA dust samples are collected in polystyrene acrylonitrile air-monitoring cassettes with polytetrafluoroethylene filters and porous plastic backing pads.

The sodium is determined after being released from the PA superabsorbent powder by exchange with potassium in a potassium chloride solution. The amount of dissolved sodium is then determined using AAS, and the mass of the PA superabsorbent powder collected is calculated after subtracting the background sodium levels present in blank cassettes.

To minimize sodium contamination, cassettes are prewashed before collecting the airborne superabsorbent powder. For the analysis, an aliquot of the potassium chloride solution is drawn from the cassette directly into the atomic absorption spray chamber.

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