



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 41171-2021

**Urine-absorbing aids for incontinence - Measurement of airborne
respirable polyacrylate superabsorbent materials - Determination of
dust in collection cassettes by sodium atomic absorption spectrometry
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted:

This document is identical to ISO 17191:2004 "Air-inhalable polyacrylic acid superabsorbent materials for incontinence urine absorption aids" Measurement of Sodium Atomic Absorption Spectrometry for the Determination of Collection Box Dust":

A chapter "Terms and Definitions" has been added to this document:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

ISO 17191 was originally developed by the European Nonwovens Association (EDANA) and specifies the determination of polyacrylic acid superabsorbent powders in air:

The test method for dust content is part 1 of 12 parts of the test method series: The remaining 11 parts are for the determination of polymeric water-absorbing materials the test method for material properties was later converted into ISO 17190 consisting of 11 parts, and was equivalently adopted by my country and converted into a national standard Standard GB/T 20405:

The test methods in ISO 17191 have been used in foreign countries for many years, according to the general standards for the pros and cons of test methods (validity and reproducibility):

etc.), the reliability has been proven, and it is suitable for polyacrylic acid superabsorbent materials in sanitary products including incontinence urine absorption aids:

material detection:

Urine absorption aids for incontinence Measurement of Airborne Respirable Polyacrylic Super Absorbent Materials Determination of Dust Collection Box by Sodium Atomic Absorption Spectrometry

1 Scope

This document describes a method for the determination of polyacrylic acid superabsorbent powder content in air dust by measuring sodium atoms by atomic absorption spectrometry Law: A polyacrylic dust sample was collected in a polystyrene-acrylonitrile air monitoring box using a Teflon filter and porous plastic liner:

This document applies to 0.2μg~60μg (detection limit is close to 0.2μg) superabsorbent powder:

NOTE: This test is used for the determination of low levels of sodium and requires high cleanliness operating conditions: Test analysis was successful with deionized/distilled water with very low sodium content the essential:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

ISO 3696:1987 Specification and test methods for water in analytical laboratories (Waterforanalyticallaboratoryuse-Specificationandtestmethods) Note: GB/T 6682-2008 Specifications and test methods for analytical laboratory water (ISO 3696:1987, MOD)

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document:

4 Test principle

The content of sodium atoms in the polyacrylic acid superabsorbent powder collected by the air monitoring box was determined by atomic absorption spectrometry: by potassium

chloride solution After the sodium atom was released from the polyacrylic acid superabsorbent powder by potassium replacement, the dissolved sodium content was determined by atomic absorption spectrometry, and the blank was removed:

After the background content of sodium in the box, the mass of the collected polyacrylic acid superabsorbent powder was calculated:

To minimize sodium interference, pre-clean the collection box before collecting airborne superabsorbent powders: For ease of analysis, one aliquot of potassium chloride was dissolved in the liquid is directly sucked into the atomic absorption atomization chamber from the collection box:

5 Reagents

Unless otherwise specified, use only recognized analytical grade reagents: Use plastic containers for all reagents and solutions, potassium chloride solution (5:5) and isopropanol (5:3): Use glass containers for these reagents and solutions during transport:

Pre-analyze sodium in the reagents and solutions specified in 5:1, 5:2 and 5:3 by atomic absorption spectrometry before use in cleaning the collection box or sodium analysis (Na) content:

5.1

Potassium chloride (KCl), the KCl content is not less than 99.999%; the Na content is less than 10 µg/g: