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

GB/T 20405.4-2025

**Urine-absorbing aids for incontinence - Polyacrylate
superabsorbent powders - Part 4: Test method for the moisture
content as weight loss upon heating**

失禁者用尿液吸收剂 聚丙烯酸酯高吸水性粉末 第4部分：用加热失重法测定水分
含量

(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 for standardization documents" Drafting.

This document is part 4 of GB/T 20405 "Polyacrylate super absorbent powder for urine absorbent for incontinence". GB/T 20405 has been the following parts have been published.

- Part 1: Method for determination of pH value;
- Part 2: Test method for the determination of residual acrylate monomer content;
- Part 3: Test method for particle size distribution by sieving;
- Part 4: Determination of moisture content by loss on heating method;
- Part 5: Determination of water absorption in saline solution by gravimetric method.

This document replaces GB/T 20405.4-2006 "Test method for properties of polymer matrix absorbent materials for urine absorbents for incontinence" Compared with GB/T 20405.4-2006, except for structural adjustment and editorial changes, in addition to the above, the main technical changes are as follows.

- a) Added warnings throughout the text;
- b) The scope has been changed (see Chapter 1, Chapter 1 of the 2006 edition);
- c) Added the terms and definitions of sample and specimen (see Chapter 3);
- d) Added reagents and materials (see Chapter 5);
- e) Changed the requirements for analytical balance (see 6.1, 4.1 of the 2006 edition), changed the requirements for drying container (see 6.2, 4.2), changed the requirements for

electric heating constant temperature heating box (see 6.3, 4.3 of the 2006 edition), changed the requirements for desiccators (see 6.4, 4.4 of the 2006 edition), the requirements for scrapers have been changed (see 6.5, 4.5 of the 2006 edition);

f) Added environmental conditions requirements (see Chapter 7);

g) Changed the sampling requirements (see Chapter 8, Chapter 5 of the 2006 edition);

h) The steps have been changed (see Chapter 9, Chapter 6 of the 2006 edition);

i) Changed the reporting requirements (see Chapter 11, Chapter 9 of the 2006 edition);

j) The precision has been changed (see Chapter 12, Chapter 8 of the 2006 edition).

This document is modified to adopt ISO 17190.4:2020 "Polyacrylate superabsorbent powder for incontinence" Part 4.

Determination of moisture content by loss on heating method.

The following editorial changes were made to this document.

--- In order to coordinate with the existing standards, the name of the standard will be changed to "Polyacrylate Super Absorbent Powder for Incontinence" Part. Determination of moisture content by weight loss on heating";

--- Deleted the relevant content of particulate matter information provided by foreign institutions in Chapter 8;

--- Deleted the relevant content of Chapter 12 on the practices of foreign institutions.

The technical differences between this document and ISO 17190.4:2020 and their reasons are as follows.

--- Deleted the requirements on software and versions used by computers in Chapter 11 to adapt to my country's technical conditions.

Introduction

Polyacrylate super absorbent powder is a kind of urine absorbent for incontinence. The water content is A characteristic.

GB/T 20405 series of test methods are applicable to the detection of polyacrylate highly absorbent powders in sanitary products, including those for incontinence.

Materials testing for urine absorption aids. These test methods are designed specifically for testing materials and are not intended for, or applicable to, finished urine absorption aids.

Equipment testing.

GB/T 20405 is planned to consist of 11 parts.

--- Part 1: pH determination method. The purpose is to provide a method for determining the pH value of powdered highly water-absorbent polyacrylates.

method.

--- Part 2: Test method for determination of residual acrylate monomer content. The purpose is to provide a method for determining the highly absorbent polyacrylic acid powder Test method for residual sodium acrylate and total amount of acrylic acid (expressed as acrylic acid) in

--- Part 3: Test method for particle size distribution by sieving. The purpose is to provide a method for measuring particle size not greater than 850 μm Test method for particle size distribution of cross-linked polyacrylate superabsorbent powders.

--- Part 4: Determination of moisture content by heating weight loss method. The purpose is to provide a cross-linked polyacrylate highly absorbent powder water Method for determination of thermal mass loss of fraction content.

--- Part 5: Determination of water absorption by weighing in saline solution. The purpose is to provide a polyacrylate highly absorbent powder in Method for determination of swelling capacity in saline.

--- Part 6: Determination of the saline solution retention rate after centrifugation by weighing method. The purpose is to provide a method for determining the high water absorption of polyacrylate A method to measure the ability of a polymer powder to retain saline solution after centrifugation.

--- Part 7: Determination of the amount of liquid absorbed under pressure by weighing method. The purpose is to provide high water absorption of polyacrylates under specific pressure.

Method for determination of the absorption of saline solution by powders.

--- Part 8: Determination of flow rate by weighing method. The purpose is to provide a method for determining the mass flow rate of polyacrylate superabsorbent powder.

--- Part 9: Determination of density by weighing method. The purpose is to provide polyacrylates with high water absorption properties for incontinence urine absorption aids.

Method for determination of powder density.

--- Part 10: Determination of extractable polymer content by potentiometric titration. The purpose is to provide polyacrylate highly absorbent powder that can be used in salt Method for determination of the mass fraction of carboxylic acid groups of different chain lengths extracted from water.

--- Part 11: Determination of inhalable particle content. The purpose is to provide the inhalable particle content of polyacrylate super absorbent powder.

Determination method.

Urine absorbent for incontinence Polyacrylate highly absorbent powder Part 4:

Determination of moisture content by loss on heating Warning---This document does not address any safety issues associated with its use. Users of this document are responsible for conducting appropriate Personnel performing the tests should be adequately trained in all aspects of the procedure.

1 Scope

This document provides a test method for evaluating the mass loss of cross-linked polyacrylate superabsorbent powders upon heating.

This document applies to polymeric superabsorbent materials in powder form that are free-flowing under specified test conditions.

Substances other than water may interfere with the results and it is the responsibility of the polymer formulator/manufacturer to determine whether such interference exists and Avoid using the method, provide an alternative method, or modify the method accordingly.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 187 Standard atmospheric conditions for the handling and testing of paper, board and pulp specimens and procedures for monitoring atmospheric conditions and sample conditioning Note. GB/T 10739-2023 Standard atmospheric conditions for handling and testing of paper, paperboard and pulp samples (ISO 187:2022, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

Sample

A product or part of a product extracted from a production batch for testing purposes, which is identifiable and traceable to its origin.

Sample

Identify the portion of the sample (3.1) that is specifically intended for testing.