

ICS 11.180.20

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

GB/T 20405.2-2024

Replacing GB/T 20405.2-2006

**Urine-absorbing aids for incontinence - Polyacrylate
superabsorbent powders - Part 2: Test method for
determination of the amount of residual acrylate monomers**

失禁者用尿液吸收剂 聚丙烯酸酯高吸水性粉末 第2部分：测定丙烯酸酯单体残余
量的试验方法

(English Translation)

Issued on: September 29, 2024

Implemented on: January 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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 2 of GB/T 20405 "Polyacrylate superabsorbent powder for urine absorbent for incontinence".

GB/T 20405 has published the following parts.

- 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;
- Part 5: Determination of water absorption in physiological saline by weighing method.

This document replaces GB/T 20405.2-2006 "Test method for properties of polymer matrix absorbent materials for urine absorbents for incontinence" Part 2: Determination of residual monomers. Compared with GB/T 20405.2-2006, in addition to structural adjustments and editorial changes, the main technical changes are the following.

- a) Added the terms and definitions of "sample" and "specimen" (see 3.2 and 3.3);
- b) Changed the requirements for analytical balances in equipment and clarified the corresponding weighing samples for analytical balances (see 6.1, 6.2, 6.3, 2006 edition). 6.1, 6.2);
- c) Added the recommended styles of magnetic stirrers (see 6.7);
- d) The method of preparing the calibration standard solution was changed from preparing

the remaining solutions from S1 solution to preparing S2 solution from S1 solution.

solution, and then take solution S2 to prepare the remaining solutions S3, S4, S5, and S6 (see 6.15, 5.2 of the 2006 edition);

e) Changed the pre-sampling procedure from "shake the container 3 to 5 times" to "shake the container in a spatial '8' motion" 5 to 10 times" (see Chapter 9, Chapter 7 of the 2006 edition);

f) The stirring speed was changed from (500 ± 50) r/min to (250 ± 50) r/min (see 10.6, 2006 edition).

7.2.5);

g) Laboratory analysis and statistical evaluation (see Chapter 13, Chapter 10 and Appendix B of the 2006 edition) have been changed.

This document is equivalent to ISO 17190-2:2021 "Polyacrylate superabsorbent powder for incontinence" Part 2.

Test method for determination of residual acrylate monomer content.

Introduction

Polymer matrix liquid absorbent material is a kind of urine absorbent for incontinence. The monomer residual amount is a kind of polymer matrix liquid absorbent material.

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 weight loss on heating. The purpose is to provide a cross-linked polyacrylate highly absorbent powder Method for determining the weight loss on heating when the moisture content is between 0% and 5%.

--- Part 5: Determination of water absorption by weighing method in physiological saline. The purpose is to provide a polyacrylate highly absorbent powder 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.

Polyacrylate high absorbent for incontinence Hygroscopic powders. Part 2: Determination of acrylates Test method for residual monomer content Warning---This document does not claim to solve any safety issues related to its use. Users of this document are responsible for Personnel performing the tests should be fully trained in all aspects of this procedure.

Training.

1 Scope

This document describes the determination of residual sodium acrylate and total amount of acrylic acid monomer (calculated as acrylic acid) in polyacrylate superabsorbent powders. method.

2 Normative references

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

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

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 specimen handling Note. GB/T 10739-2023 Standard atmospheric conditions for handling and testing of paper, paperboard and pulp samples (ISO 187:2022, MOD) and test methods) Note. GB/T 6682-2008 Specifications and test methods for water used in analytical laboratories (ISO 3696:1987, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

The total amount of residual sodium acrylate and acrylic acid monomer.

Sample

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

Sample

The portion of the determined sample (3.2) used for testing.

4 General

The residual monomers of sodium acrylate and acrylic acid were extracted from polyacrylate superabsorbent powder and measured by high performance liquid chromatography (HPLC).