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

GB/T 20405.1-2023

Replacing GB/T 20405.1-2006

**Urine-absorbing aids for incontinence - Polyacrylate
superabsorbent powders - Part 1: Test methods for
determination of pH**

失禁者用尿液吸收剂 聚丙烯酸酯高吸水性粉末 第1部分：pH值的测定方法
(English Translation)

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Foreword

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

This document is Part 1 of GB/T 20405 "Urine absorbent polyacrylate super absorbent powder for incontinence patients":

GB/T 20405 has released the following parts:

- Part 1: Determination method of pH value;
- Part 2: Test method for determining the residual amount of acrylate monomer;
- Part 3: Test method for determination of particle size distribution by sieving method;
- Part 4: Determination of moisture content by weight loss on heating method;
- Part 5: Determination of water absorption in physiological saline by weighing method:

This document replaces GB/T 20405.1-2006 "Test methods for properties of polymer matrix absorbent materials for urine absorbents for incontinence patients" Part 1: Determination of pH value", compared with GB/T 20405.1-2006, in addition to structural adjustments and editorial changes, there are major technical changes as follows:

- a) The mixing speed and time were changed, the solidification time of the polymer gel was increased, and the pH of the supernatant liquid after the electrode was immersed the recording interval is set to 30s (see Chapter 9, Chapter 7 of the:2006 edition);
- b) Removed the requirement for repeated testing (see Chapter 8 of the:2006 edition);
- c) Changed the statistical results of inter-laboratory tests to the analysis and statistical evaluation of new laboratory test data (see Section 12 Chapter 8 and Appendix A of the:2006 edition):

This document is equivalent to ISO 17190-1:2020 "Urine absorbent polyacrylate super absorbent powder for incontinence Part 1:

Method for measuring pH value:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

Polymer matrix absorbent materials are required in urine absorption assistive devices for infants, the elderly, and paralyzed and incontinent patients: gather Acrylic super absorbent powder is a kind of urine absorbent for incontinence patients: The pH value is a characteristic of this absorbent material:

The GB/T 20405 series of test methods are suitable for the detection of polyacrylate super absorbent powders in sanitary products, including those for incontinence Material testing of urine absorption aids: These test methods are designed specifically for testing materials and are not intended for use with, and are not applicable to, finished urine absorption aids:

Instrument testing:

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

---Part 1: Determination method of pH value: The purpose is to provide the determination of pH value of powdered highly water-absorbent polyacrylate:

method:

---Part 2: Test method for determining the residual amount of acrylate monomer: The purpose is to provide a method for determining the highly water-absorbent polyacrylate powder:

Test method for the total amount of sodium acrylate and acrylic acid remaining in the final product (expressed as acrylic acid):

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

---Part 4: Determination of moisture content by weight loss on heating method: The purpose is to provide a cross-linked polyacrylate highly water-absorbent powder Determination method of weight loss on heating when moisture content is between 0% and 5%:

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

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

---Part 7: Determination of liquid suction volume under pressure by weighing method: The purpose is to provide high water absorbency of polyacrylate under specific pressure Method for determination of absorption of salt solution by powder:

---Part 8: Determination of flow rate by weighing method: The purpose is to provide a method for measuring the mass flow rate of polyacrylate highly water-absorbent powder:

---Part 9: Determination of density by weighing method: The purpose is to provide highly water-absorbent polyacrylate used in urine absorption assistive devices for incontinence Method for determination of powder density:

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

---Part 11: Determination of respirable particle content: The purpose is to provide polyacrylate highly water-absorbent powder inhalable particles containing Quantity measurement method:

Urinary absorbent polyacrylate high absorbency for incontinence patients Aqueous powders Part 1: Determination of pH value Warning---This document does not purport to resolve any security issues related to its use: Users of this document are responsible for proceeding with their use Implement appropriate safety and health practices and determine the applicability of regulatory restrictions: Personnel performing testing should be fully trained in all aspects of this procedure training:

1 Scope

This document describes a method for the determination of the pH of highly water-absorbent polyacrylates in powder form:

2 Normative reference documents

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

ISO 187 Standard atmospheric conditions for handling and testing of paper, paperboard and pulp specimens and procedures for monitoring atmospheric conditions and specimen handling Note: GB/T 10739-2002 Standard atmospheric conditions for handling and testing of paper, paperboard and pulp samples (ISO 187:1990, EQV) and test methods) Note: GB/T 6682-2008 Specifications and test methods for water used in analytical laboratories (ISO 3696:1987, MOD) ISO 10523 Determination of pH value of water quality (Water quality-Determination of PH) Note: GB/T 22592-2008 General principles for determination of pH value of water treatment agents (ISO 10523:1994, NEQ)

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 that is identifiable and traceable to its origin:

4 Principles

Use a pH meter and use the standard pH-responsive glass electrode method to measure the concentration of physiological saline after adding polyacrylate super absorbent powder:

pH value: