ICS 59.060
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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 16258-2018

Test method for sugar in cotton fibers -- Spectrophotometry

Issued on: February 6, 2018 **Implemented on: September 1, 2018**

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

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 16258-2008 "Method for Quantitative Test of Cotton Fiber Containing Sugar". The main technical changes are as follows.

--- Modification of the contents of Chapter 2 "Normative References";

---Replaced the reagents in Chapter 6, changed "fatty acid alkanolamides" to "fatty alcohol polyoxyethylene ethers," and increased fatty alcohol polyoxygenation

Ethylene ether solution notes;

--- The contents of Chapter 7 "Preparation of Samples" were revised;

--- In Chapter 8, "8.1 Blank Test," replace "Stay 5 minutes" with "Stay for 30 minutes."

--- Changes to Chapter 8 "8.2.3 Working Curve Drawing";

--- Delete the "8.4 test of the actual moisture regain of raw cotton" and directly use the humidity adjustment method to take the cotton sample;

--- Added an explanation of correcting absorbance to Chapter 9 "9.1 Calculation Formula" and modified some of the contents;

--- Change the expression of "absorbance" in the standard to "absorbance";

--- Delete "10 precision" and add "10 test report".

This standard uses the redrafted method to amend the ISO 18068.2014 "Quantity Method for Cotton Fiber Sugar Test Method". This standard and

The main technical differences of ISO 18068.2014 are as follows.

--- With regard to normative references, this standard has made adjustments to specific technical differences in order to adapt to China's technical conditions and adjustments.

The focus is reflected in Chapter 2, "Normative References," and the specific adjustments are as follows.

* Replaced ISO 139 with GB/T 6529 modified to adopt international standards;

* Replaced ISO 3696 with GB/T 6682 modified to adopt international standards;

* Use national standard GB/T 6097 instead of ISO 1130.1975;

* Removed ISO 4793.1980;

* Added GB/T 8170;

--- Change the 6.4 fatty acid alkanolamides in ISO 18068.2014 to "fatty alcohol polyoxyethylene ethers";

--- Remove "6.6.2 Fatty acid alkanolamide (0.4g/L)" from ISO 18068.2014, refer to "6.6.3 Fatty Acid Alkanolamides

(0.05g/L)" changed to "6.6.2 fatty alcohol polyoxyethylene ether (0.005%) solution";

--- Modify the quality of the laboratory sample of sample preparation in ISO 18068.2014 to not less than 150g;

--- Modify "0.4 g/L fatty acid alkanolamide" in the blank test of ISO 18068.2014 8.1 to "0.005% fatty alcohol polyoxygenation

Vinyl ether;

--- Change the standing time after 8.8.1 coloring in ISO 18068.2014 from "5min" to "30min";

--- In Chapter 9 of this standard, the calculation formula for the absorbance of the calibration sample has been added.

For ease of use, this standard has made the following editorial changes.

--- Delete the warning in ISO 18068.2014;

--- Modify the expression of 5.1 spectrophotometer in ISO 18068.2014, and combine 5.13 cuvette specifications;

--- Combining the electronic balances of 5.2 specifications in ISO 18068.2014 into one electronic balance that can meet the test requirements;

--- Replace the constant temperature water bath oscillator of ISO 18068.2014 5.3 constant

temperature water tank and 5.12 mechanical oscillator;

--- Remove 5.8 beaker specifications from ISO 18068.2014;

--- Adjust 5.9, 5.10, and 5.11 in ISO 18068.2014 to 5.8, 5.9, and 5.10;

--- Delete b) and e) from ISO 18068.2014 10 Test Report.

This standard is proposed and managed by the China Fiber Inspection Bureau.

This standard was drafted by. Hubei Provincial Fiber Inspection Bureau, Sichuan Entry-Exit Inspection and Quarantine Bureau, and Shandong Provincial Fiber Inspection Bureau.

1 Scope

This standard stipulates the use of 3,5-dihydroxytoluene-sulfuric acid solution as a coloring agent and quantitative measurement of the total content of cotton fiber surface using a spectrophotometer.

Determination of sugar.

This standard applies to raw cotton, sliver, laps and other cotton fibers.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 6097 Cotton Fiber Test Sampling Method

GB/T 6529 Standard Atmosphere for Humidification and Testing of Textiles (GB/T 6529-2008, ISO 139.2005, MOD)

GB/T 6682 Analytical Laboratory Water Specifications and Test Methods (GB/T 6682-2008, ISO 3696.1987, MOD)

GB/T 8170 Representation and Determination of Numerical Rounding Rules and Limit Values

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Sugar content percentageofsugar

The percentage of total cotton sugar (including reducing sugar, non-reducing sugar)

attached to the surface of cotton fiber is the weight of cotton fiber sample.

4 Principle

Under the action of non-ionic surfactants, sugars attached to the surface of cotton fibers are dissolved in extraction reagents and sugars are converted into strong acidic media.

For the aldehydes, a color reaction occurs with 3,5-dihydroxytoluene to generate orange-yellow compounds. Spectrophotometer at the wavelength lambda = 425nm

Quasi-work curve is more quantitative.

5.2 Electronic balance. Range >= 100g, division value 0.001g.

5.3 Constant temperature water bath oscillator. (70 +/- 2) °C; reciprocating rate of at least 60 times/min, rotary rate of at least 30 weeks/min.

5.4 250mL ground stoppered Erlenmeyer flask or 250mL iodine flask.

5.7 Measuring cylinder. 100 mL, 1000 mL.

5.8 25mL colorimetric tube and tube rack.