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

SN/T 3896.8-2020

**Import and export textiles-quantitative analysis of fibers-near
infrared method - Part 8: Mixture of cotton and polyamide**

进出口纺织品 纤维定量分析 近红外法 第8部分：棉与聚酰胺的混合物

(English Translation)

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Foreword

The SN/T 3896 "Near Infrared Method for Quantitative Analysis of Import and Export Textile Fibers" includes the following parts.

- Part 1: The mixture of polyester fiber and cotton;
- Part 2: The mixture of polyester fiber and polyurethane elastic fiber;
- Part 3: The mixture of polyamide fiber and polyurethane elastic fiber;
- Part 4: The mixture of cotton and polyurethane elastic fiber;
- Part 5: Mixture of polyester fiber and viscose fiber;
- Part 6: Mixture of polyester fiber and polyamide fiber;
- Part 7: Mixture of polyester fiber and polyamide fiber;
- Part 8: Mixture of cotton and polyamide fiber;

This part is part 8 of SN/T 3896.

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

This part is proposed and managed by the General Administration of Customs of the People's Republic of China.

Drafting organizations of this section. Zhongshan Customs, Nanchang Customs, Guangzhou Customs and Ganzhou Customs.

1 Scope

This part of SN/T 3896 stipulates the principle, equipment, and equipment for the rapid determination of fiber content in cotton and polyamide mixtures by near infrared spectroscopy.

Sample and environmental requirements, measurement procedures, result processing, test reports.

This part is applicable to the rapid measurement of fiber content in cotton and polyamide fiber blended fabrics other than coated fabrics and pigment printing fabrics.

It is determined that the cotton content of the sample is between 0% and 100%.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 2910.1 Textile Quantitative Chemical Analysis Part 1: General Test Rules GB/T 2910.7 Quantitative Chemical Analysis of Textiles Part 7: Mixture of Polyamide Fiber and Certain Other Fibers (Formic Acid Method) FZ/T 01057 (all parts) Textile fiber identification test method

3 Terms and definitions

The following terms and definitions apply to this document.

Calibration model

The mathematical model of the relationship between the near-infrared spectrum of the sample and the corresponding chemical standard value established by the chemometric method, the calibration model Including qualitative models and quantitative models. The qualitative model is based on a large amount of information and data, based on expert experience and existing knowledge, Use the methods of computer and mathematical reasoning to complete the process of automatic identification and evaluation of shapes, patterns, curves, numbers and graphics; quantification the model is a mathematical

relationship established between the concentration of a substance (or other physical and chemical properties) and the response value of the analytical instrument.

Note: The near-infrared qualitative model of the mixture of cotton and polyamide fiber is the identification model to determine whether the sample contains cotton and polyamide fiber. Cotton and polyamide the near-infrared quantitative model of the mixture of amine fiber, that is, the establishment of the near-infrared spectrum of the mixture of cotton and polyamide fiber using chemometric methods the mathematical relationship between the sample fiber content obtained by the standard method (GB/T 2910.1, GB/T 2910.7).

Homogeneous sample

The sample of any organization structure composed of a blending ratio (except for the core-spun yarn) or the difference between multiple measured values at different points on the front and back no more than 3% of the samples, the others are non-homogeneous samples.

Monitor samples

Homogeneous samples of the same species used to monitor the stability of the daily work of the near-infrared spectrometer.

Note: This sample is an essential accessory for a near-infrared spectrometer equipped with a cotton/polyamide fiber near-infrared analysis model.

Identification of fiber content the nominal value of the fiber content percentage of the textile to be tested, such as "35% cotton/65% polyamide fiber", "75% cotton/25% polyamide fiber".

4 Principle

The near-infrared spectrum of textiles reflects the chemical properties of CH, OH, CO, etc. in textile fiber molecules after textiles absorb near-infrared light.

The over-frequency vibration or rotation of the bond reflects the absorption characteristics of the near-infrared light of the textile; the chemometric method is used to establish cotton and polyamide the standard method of measuring the fiber content of the fiber mixture and the calibration model between the near-infrared spectroscopy, so that through the calibration model, the measurement Test the fiber content of the blend of cotton and polyamide fiber.

5 Equipment

5.1

Near-infrared spectrometer. Fourier transform type near-infrared spectrometer or raster scanning type optical fiber spectrometer.

5.2

Sampling accessories. rapid determination of textile fibers equipped with photosensitive devices-near infrared spectroscopy sampling accessories (see appendix A), the device Set the mass to (1 500~1 700) g.

Note: When using a Fourier transform near-infrared spectrometer for sample measurement, in order to determine the thickness of the sample to be tested, this sampling accessory should be used;

This sampling accessory is not required when measuring samples with a tracing type optical fiber spectrometer.

6.1.1 Sample classification

Divided into two types of homogeneous samples and non-homogeneous samples.

6.1.2 Sample preparation

For homogeneous samples, several layers can be folded to ensure that the surface of the sample is flat and can be tested directly.

For non-homogeneous samples, first crush the sample to fragments less than 1.5 mm, and then put it in a container of inorganic material and press it.

To ensure that the surface of the fiber cake is flat, make a sample with a thickness greater than 3 mm and a diameter greater than the diameter of the detection probe.

6.2 Environment

The temperature is 10 °C~35 °C, and the relative humidity is 30%~70%.

7.1.1 Conditions of different types of near-infrared spectrometers

Since the test results are closely related to the instruments used, and there are many types of near-infrared spectrometers, it is impossible to give near-infrared light.

1) Non-commercial statement. 7.1.1.1 Fourier transform type near infrared spectrometer is Buqi NIRFlex N-500 near infrared spectrometer, 7.1.1.2 raster scan type the optical fiber spectrometer is a concentrated SupNIR-1100 portable near-infrared spectrometer. The test instruments listed here are only for reference and do not involve for commercial purposes, standard users are encouraged to try different manufacturers or different models of instruments.

The general parameters of the spectrometer. A near-infrared spectrometer that meets the following instrument conditions has been proven to be suitable for testing.