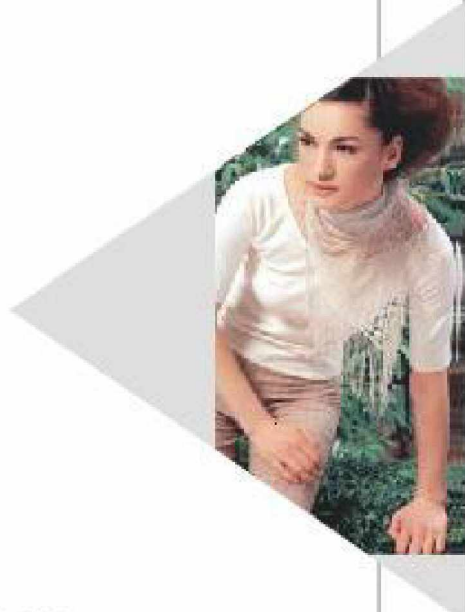




# BAMBOO FIBER IDENTIFICATION RULE

CTITI (China Textile Industry Testing Institute)  
Technical center of Bambrotex



*BambroTex*

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## **EXECUTIVE SUMMARY**

Together with **CTITI** (China Textile Industry Testing Institute), technical center of **BAMBROTEX** constituted the following standard Bamboo Fiber Identification Rule (BFIR) and related documents. According to repeated experiment results, the testing procedure indicated in BFIR proved to be able to conveniently and successfully identify real bamboo fiber from common viscose fiber.

BFIR is based on the fact that the cross-section of the bamboo fiber is filled with more micro-holes and micro-gaps than common viscose fiber. This notable microstructure brings bamboo textile unusual breath ability and coolness function. Also this microstructure leads to the result that the solubility of bamboo fiber in sulfuric acid is much higher than common viscose fiber.

In particular, BFIR makes the following points.

### I Principle

To identify the different bamboo fibers from common viscose fiber according to their solubility in sulfuric acid

### II Preparation of the sample

Comb both bamboo fiber sample and common viscose fiber sample with fingers, remove the dissociated fibers, cut the fibers and take the middle pieces, and ensure that no impurity exists in 10 mm of the middle pieces.

### III Instruments and tools

1. Electric balance: Precision 0.1mg
2.  $G_2$ Crucible or filter
3. Beaker: 100ml
4. Weighing bottle: 70\*35mm
5. Glass rod: round end
6. Thermometer: 50°C
7. Suction pipette: 50ml
8. Measuring cylinder: 50ml, 25ml
9. Electro thermal blast loft drier101-1
10. Steel comb: 10pins/CL
11. Cutting machine: error expected 0.01mm/10mm
12. Nipper
13. SH2-D(III)circulating water vacuum pump

## IV Reagent

55.5% sulfuric acid standard solution

0.1% helianthine B

1% ammonia water

## V Steps

1. Well mix the sample 2 and measure the water content

Put the sample of proper amount into the weighing bottle and place the bottle in the drying oven under the temperature of 105~110°C for 2 hours, then put the bottle into the drier to cool down until the ambient temperature, weigh it again(precision 0.1mg)

2. Accurately take suction of 50ml 55-50% sulfuric acid under 20°C into the 100ml beaker with suction pipette and add 0.5g(precision 0.1mg) absolutely dried sample which should be completely dipped into the solution. After 30 minutes, filter with constant weigh 1G<sub>2</sub> crucible filter. Successively wash the insoluble fibers with 50ml 55.5% sulfuric acid and 50ml water and neutralize with 1% ammonia water whose weigh is about 50 times of the sample. Then wash the fibers with water and put them into the drying oven under the temperature of 105~110°C until the constant weigh.

## VI Calculation of the result:

1. Water content:

$$W = \frac{G_1 - G_2}{G_1} \times 100$$

In the equation: W—water content(%); G<sub>1</sub>—weigh of the initial sample

G<sub>2</sub>—weigh of the dried sample(g)

2. Solubility:

$$R = \frac{G(1-W) - (G_3 - G_4)}{G(1-W)} \times 100$$

In the equation: R—solubility(%)

G<sub>3</sub>— weigh(g) of the 1G<sub>2</sub>crucible and the dried insoluble fibers(g) after experiment

G<sub>4</sub>—weigh(g) of the 1G<sub>2</sub>crucible before experiment

G—the original weigh(g) of the sample

W—water content of the fiber(%)

3. Value round off

Precision of the calculation should be 0.001 and the value should be rounded off to the precision of 0.01 according to the GB8170.

4. Test result

Solubility of common viscose fiber: 19.07%

Solubility of bamboo fiber: 32.16%