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GB/T 8939-2018

Replacing GB/T 8939-2008

Sanitary absorbent pads (panty liner)

卫生巾（护垫）

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Standardization Administration of PRC.

Table of Contents

Sanitary absorbent pads (panty liner)

1 Scope

This standard specifies the requirements, test methods, inspection rules, markings, packaging, transportation, storage of sanitary absorbent pads (panty liner).

This standard is applicable to sanitary absorbent pads and panty liners which are composed of surface layer, inner absorption layer (containing fluff pulp and/or superabsorbent resin), anti-seepage base film, etc., and are specially machined and formed for women use.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB/T 462 Paper, board and pulp - Determination of moisture content of analytical sample

GB/T 6682 Water for analytical laboratory use - Specification and test methods

GB/T 10739 Paper, board and pulps - Standard atmosphere for conditioning and testing of samples

GB 15979 Hygienic standard for disposable sanitary products

GB/T 21331 Fluff pulp

GB/T 22875 Superabsorbent polymer for sanitary towel

GB/T 24292 Sanitary product - Air-laid paper

GB/T 27731 Release paper for sanitary products

GB/T 30133 The specification of cover stock for sanitary absorbent pads

GB/T 34448-2017 Tissue paper and disposable products - Determination of formaldehyde

The products shall be clean, free from dirt and damage, contain no foreign objects. Raw materials used for sanitary absorbent pads (panty liner): The fluff pulp shall meet the requirements of GB/T 21331; the high-absorbent resins shall meet the requirements of GB/T 22875; the release paper shall meet the requirements of GB/T 27731; the absorbent liners shall meet the requirements of QB/T 4508; the air-laid paper shall meet the requirements of GB/T 24292; the surface layer material shall meet the requirements of GB/T 30133.

3.5 Sanitary absorbent pads (panty liner) shall be packed in separate pieces. The materials used for direct contact with the product shall not use the recycled raw materials.

3.6 The both ends of sanitary absorbent pads (panty liner) shall be firmly sealed. They shall not break during use.

3.7 Sanitary absorbent pads (panty liner) shall not be displaced during normal use. They shall not damage the underwear when peeled off. It shall not have obvious residue.

3.8 The release paper of sanitary absorbent pads shall not fall off on its own and can be naturally and completely removed.

4 Test methods

4.1 Specimen processing and test conditions

When determining the deviation of total-length, deviation of strip mass, water absorption rate, absorption speed, peel strength of back adhesive, the specimen shall be conditioned for at least 4 hours under the standard atmospheric conditions as specified in GB/T 10739, then tested under these conditions.

4.2 Deviation of total-length

Use a ruler to measure the total-length of the specimen (measured from the longest part of the specimen), accurate to 1 mm. For each sample of same specifications, measure 6 specimens, which are from at least two sales packages, at least 2 specimens from each package. Take average value of the 6 specimens. Use the formula (1) to calculate the deviation of total length. The result is rounded off to an integer position.

$$\text{Deviation of total-length} = (\text{average value} - \text{nominal value}) / \text{nominal value} \times 100\% \quad \text{.....(1)}$$

Note: If the sales package contains a single piece, take 6 packages for testing.

4.3 Deviation of strip mass

sample. Remove the back adhesive, bottom film, release paper. From the middle position of the two specimens, respectively take 2 g of sample material. Cut the sample into blocks. Mix it uniformly. Divide it into two groups of specimens for parallel test. The absolute error between the two determined values shall not exceed 1.0%. Take the arithmetic mean value as the determination result, which is rounded off to one decimal place.

Note: Try to shorten the sampling time, which is usually not more than 2 min. If the mass of a single specimen is less than 2 g, it may be sampled from multiple pieces.

4.8 Formaldehyde content

The formaldehyde content is determined by acetylacetone-visible spectrophotometry according to GB/T 34448-2017. When sampling, remove the outer packaging and release paper of the single-piece sanitary absorbent pads (panty liner). From the both ends and middle position, cut the specimen, which shall contain each layer of materials.

4.9 Migratory fluorescent substance

The migratory fluorescent substance is determined in accordance with Appendix D.

4.10 Peel strength of back adhesive

The peel strength of the back adhesive is determined according to Appendix E.

4.11 Hygienic indicators

The hygienic indicators are determined according to GB 15979.

5 Inspection rules

5.1 Requirements for inspection lot

Take one delivery as a batch. The unit of the inspection sample is box. Each batch contains not more than 5000 boxes

5.2 Sampling method

From a batch of products, randomly take 3 boxes. From each box, take 5 packages of samples, wherein 3 packages are used for microbiological testing, 6 packages for microbiological retests, 3 packages for retention, 3 packages (based on 10 pieces per package) for other performance tests.

5.3 Judgment rules

When the inspected product meets all the requirements of clause 3 of this

standard test module

A.2.2 Standard synthetic test solution: The formulation is as shown in Appendix B.

A.2.3 Distilled water or deionized water.

A.3 Sampling

From each sample, take 5 specimens. The specimens taken shall be from at least two sales packages.

A.4 Test procedure

A.4.1 Place the absorption speed tester (A.2.1) in a horizontal position. Pour enough standard synthetic test solution (A.2.2) into the liquid storage tank. Turn on the instrument. Click the rinse button to rinse it twice. Follow the requirements of as specified in the instrument manual to calibrate the liquid-adding volume of the automatic liquid adding device.

A.4.2 Remove the curved sample holder from the absorption speed tester. Place it on a horizontal bench. Take a piece of specimen. Remove the bottom release paper. Gently attach it to the curved test area of the curved sample holder. When attaching it, the front end of the specimen is on the left (L) side of the curved sample holder, the rear end is on the right (R) side of the curved sample holder, the center line of the wing (perpendicular to the pad) is aligned to the line corresponding to the liquid discharge port of the base. Attach the wings to both sides of the curved sample holder. Then put the curved sample holder to which the specimen is attached n a fixed position of the absorption speed tester.

A.4.3 Enter the test interface of the absorption speed tester. Set the thickness of specimen, to ensure that the standard test module can fall freely onto the specimen's surface. Click the test. The automatic liquid adding device adds (5.0 ± 0.1) mL of standard synthetic test solution to the standard test module. The timer automatically starts timekeeping, until the liquid level disappears at the lowest point of the absorption zone. Automatically stop timekeeping.

A.4.4 After the test is completed, use a clean tissue paper to wipe the bottom of the standard test module clean. Remove the curved sample holder. Tear off the tested specimen. Prepare for the next test.

A.4.5 From each sample, measure at least 5 valid data.

A.4.6 After all tests have been completed, use distilled water or deionized water to clean the absorption speed tester and standard test module.

A.5 Representation of results

Appendix B

(Normative)

Formula of standard synthetic test solution

B.1 Principle

The standard synthetic test solution is formulated according to the main physical properties of human menstrual blood. It has similar fluidity and absorption characteristics.

B.2 Formula

The formula is as follows:

a) Distilled water or deionized water: 860 mL;

b) Sodium chloride: 10.00 g, chemically pure;

c) Sodium carbonate: 40.00 g, chemically pure;

d) Glycerol (glycerol): 140 mL, chemically pure;

e) Sodium benzoate: 1.00 g, chemically pure;

f) Color (food colorant): Moderate amount, chemically pure;

g) Sodium carboxymethyl cellulose: About 5 g, chemically pure;

h) Standard vehicle: 1% (by volume).

B.3 Physical properties of standard synthetic test solutions

At (23 ± 1) °C, the physical properties of the standard synthetic test solution shall meet the following requirements:

a) Density: (1.05 ± 0.05) g/cm^3;

b) Viscosity: (11.9 ± 0.7) s (measured by the No.4 paint cup);

c) Surface tension: (36 ± 4) mN/m.

Appendix D

(Normative)

Determination of migratory fluorescent substances

D.1 Reagents and materials

Unless otherwise specified, it only uses the analytically pure reagents.

D.1.1 Water: GB/T 6682, grade-3.

D.1.2 Gauze: Pure cotton material, size is about 5 cm x 5 cm.

D.1.3 Ammonia water: 0.1%.

D.1.4 Hydrochloric acid solution: 10%.

D.1.5 Extraction solution: Water which has a pH of 7.5 ~ 9.0 as adjusted by 0.1% ammonia water (D.1.3).

D.1.6 Fluorescent standard sample: Fluorescence is uniform, the fluorescence brightness is 0.40% ~ 0.60%.

Note: Except for the fluorescent standard sample, the reagents and materials used are not fluorescent under UV light.

D.2 Instruments

D.2.1 Balance: The sensitivity is 0.001 g.

D.2.2 Conical flask: 250 mL.

D.2.3 G1 glass core funnel.

D.2.4 Glass watch glass.

D.2.5 UV lamps: Wavelengths is 254 nm and 365 nm, with eye protective device.

D.2.6 pH meter: Accuracy is 0.01.

D.2.7 Constant-temperature water-bath: The temperature control accuracy is (40 ± 2) °C.

D.3 Test procedure and determination of results

D.3.1 From the sample, randomly take a specimen. Remove the outer packaging. Place the specimen (including the release paper) together with the

Appendix E

(Normative)

Determination of peel strength of back adhesive

E.1 Principle

Attach the standard jersey to the back adhesive of the sanitary absorbent pads (panty liner). After being treated for a certain period of time under the specified conditions, carry out 180° peeling off against the sanitary absorbent pads (panty liner) from the standard jersey. Calculate the average peeling force within the specified peeling displacement. Use the average peeling force to indicate the peel strength of the back adhesive of the sanitary absorbent pads (panty liner).

E.2 Instruments and equipment

E.2.1 Tester of peel strength of back adhesive: The width of the chuck is (80 ± 1) mm. The range is 0 ~ 30 N. During the test, it may obtain at least 20 effective peel force values per second.

E.2.2 Counterweight: The length is (80 ± 1) mm. The width is (62 ± 1) mm. the mass is (500 ± 5) g. It is made of stainless-steel or other materials.

E.2.3 Oven: It may maintain the temperature at (37 ± 2) °C.

E.2.4 Standard jersey: Unbleached dyed worsted, without post-treatment. It is quantitatively fixed at 120 g/m^2 ~ 140 g/m^2. The length is (120 ± 1) mm. The width is (65 ± 1) mm. The elongation at break along the length direction is less than or equal to 25.0%.

E.2.5 Flat plate: It is glass or metal material, square-shaped; the size is selected according to the test sample and the size of the constant-temperature oven.

E.3 Collection and pre-test treatment of specimen

For each sample, take at least 5 sanitary absorbent pads (panty liner) from at least two sales packages. Before preparation of specimen, the sanitary absorbent pads and standard jersey to be tested shall be placed at a temperature of (23 ± 1) °C and a relative humidity of (50 ± 2)% for more than 4 h.

E.4 Test procedures

E.4.1 Take a piece of sanitary absorbent pad (panty liner). Tear off the outer packaging film.

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