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NATIONAL STANDARD
OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 27728-2011

Partly replacing GB/T 20808-2006

Wet wipes

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Foreword

This standard is drafted according to the provisions of GB/T 1.1-2009.

This standard partly replaces the wet wipes part in GB/T 20808-2006, “Facial tissue (including wet wipes)”. Compared with GB/T 20808-2006, there are following main changes in this standard:

- Content of facial tissue has been deleted;
- Terms and definitions, as well as classification have been added;
- Indexes of migratable fluorescent whitening agent, sealability of packaging, pH, detergency, and causticity have been added;
- Provisions on packaged quantity has been adjusted;
- Containing-fluid-volume, horizontal tensile strength, dirt-degree, and other indexes have been adjusted;
- The test method of containing-fluid-volume has been modified.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility of recognizing these patents.

This standard was proposed by China National Light Industry Association.

This standard shall be under the jurisdiction of National Technical Committee for Standardization of Paper Industry (SAC/TC 141).

The responsible drafting organizations of this standard: China National Pulp and Paper Research Institute, Guangzhou Procter & Gamble Co., Ltd., Tongling Jieya Biotechnology Co., Ltd., Vinda International Holdings Limited, Unicharm Life Articles (China) Co., Ltd., Kimberly (China) Co., Ltd., Johnson & Johnson China Co., Ltd., Little Nurse (Tianjin) Industrial Development Co., Ltd., Jinjiang Hengan Paper for Family Life Co., Ltd., and Beijing Yifan Cleaning Article Co., Ltd.

The chief drafting staffs of this standard: Chenxi, Qiu Wenlun, Gaojun, Wangzhen, Zuo Jianbo, Liping, Gao Fengjuan, and Li Difei.

This standard replaces the following historical editions:

- Partly replacing GB/T 20808-2006.

Wet wipes

1 Scope

This standard specifies classifications, requirements, test method, inspection rules, marking, packaging, transportation, and storage of wet wipes.

This standard applies to various wet wipes which are made from non-woven, dust-free paper, or other raw materials; and used in daily life.

2 Normative References

The articles contained in the following documents have become part of this standard when they are quoted herein. For the dated documents so quoted, all the modifications (Including all corrections) or revisions made thereafter shall be applicable to this standard.

GB/T 1541-1989	Paper and board - Determination of dirt
GB/T 1545-2008	Paper board and pulp - Determination of acidity or alkalinity
GB/T 2828.1	Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
GB/T 4100-2006	Ceramic tiles
GB/T 10739	Paper, board and pulps--standard atmosphere for conditioning and testing
GB/T 12914-2008	Paper and board - Determination of tensile properties
GB/T 15171	Test method for leaks in sealed flexible packages
GB 15979	Hygienic standard for disposable sanitary products
JJF 1070-2005	Rules of Metrological Testing for Net Quantity of Products in Prepackages with Fixed Content

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Wet wipes for kitchen

They refer to the wet wipes used to clean kitchen objects (e.g. gas stove, range hood, etc.).

5.4 Wipes shall not have hair loss, crumbs phenomenon.

5.5 Toxic and harmful raw materials shall not be used in wet wipes. For wet wipes for human body, only natural fiber shall be used as raw materials. Using any recycled fibrous substance as the raw material is not allowed.

6 Test Method

6.1 Treatment of sample

It shall carry out the treatment of sample according to GB/T 10739.

6.2 Length and width deviations

6.2.1 Length deviation

Cut off the outer packing of wet wipes from one end and wipe off the outer packing. Take out the wet wipes in the condition that they are not out of shape. Place them naturally and flatwise on the glass pane. Measure the length of samples with a ruler. There shall be 6 pieces for each same-specification sample. And the accuracy shall reach 1mm. Calculate the percentage of the difference of mean value and nominal value of the 6 samples with the nominal value. That is the determined result of length deviation of the samples, with accuracy to be 1%.

6.2.2 Width deviation

Cut off the outer packing of wet wipes from one end and wipe off the outer packing. Take out the wet wipes in the condition that they are not out of shape. Place them naturally and flatwise on the glass pane. Measure the width of samples with a ruler. There shall be 6 pieces for each same-specification sample. And the accuracy shall reach 1mm. Calculate the percentage of the difference of mean value and nominal value of the 6 samples with the nominal value. That is the determined result of width deviation of the samples, with accuracy to be 1%.

6.2.3 Calculation of length and width deviations

Calculate the length and width deviations according to Formula (1):

Deviation = (mean value - nominal value) / nominal value x 100% (1)

6.3 Containing-fluid-volume

Separately and respectively take 1 piece of wet wipe from upper, middle and lower 3 positions of a complete package of wet wipes to constitute a sample (If the single packaged quantity is less than 3 pieces, take the actual pieces of the single package as the sample). After sampling, weigh the sample immediately with a balance with sensitivity of 0.01g. Rinse the sample with distilled water or deionized water till there is no foam. Put it into a drying oven of $(85 \pm 2)^{\circ}\text{C}$ (when drying the sample, it shall not contact with four

	8(16)	1 2	-- --
501~3200	8	0 2	0 3
	8(16)	1 2	3 4
3201~35000	13	0 3	1 3
	13(26)	3 4	4 5

7.4 Determination of acceptability: The sample quantity for the first test shall be equal to the first sample quantity provided in the plan. If the number of unqualified products discovered in the first sample is less than or equal to the first acceptable quantity, then this batch shall be regarded as acceptable. If the number of unqualified products discovered in the first sample is between the first acceptable quantity and the first unacceptable quantity, then the second sample with the quantity provided in the plan shall be inspected; and it is accumulated in the number of unqualified products discovered in the first and second sample. If the accumulative number of unqualified products is less than or equal to the second acceptable quantity, then this batch shall be determined as acceptable. If the accumulative number of unqualified products is more than or equal to the second acceptable quantity, then this batch shall be determined as unacceptable.

7.5 If the purchaser has dispute to the product quality, it shall inform the supplier for joint re-inspection, within 3 months upon receiving the goods; or it entrusts an jointly-agreed inspection body to carry out the re-inspection. If the re-inspection result does not comply with this standard or provisions of contract, then this batch shall be determined as unacceptable; and the supplier shall be responsible to handle; if the re-inspection result complies with this standard or provisions of contract, then this batch shall be determined as acceptable and the purchaser shall be responsible to handle.

8 Marking and Packaging

8.1 Packaging and marking of product distribution

Product marking shall include at least following contents:

- Product name and trade mark;
- Product standard serial number;
- Main components;
- Production date and shelf life, or production batch number and expiration date;
- Product specifications;
- Product quantity (the number of pieces);
- Product qualification mark;

B.3.6 Beaker: 500mL.

B.3.7 S-shape hook: made by bending a thin stainless steel wire.

B.3.8 Thermostatic water bath.

B.3.9 Stopwatch.

B.3.10 Magnetic stirring machine.

B.3.11 Thermostatic drier box.

B.3.12 Specimen shelf.

B.3.13 Abrasive paper (cloth): 200#.

B.3.14 Degreasing cotton.

B.3.15 Dryer.

B.3.16 Electric hot plate.

B.3.17 Volumetric flask: 500mL.

B.4 Experimental procedure

B.4.1 Polishing and rinsing of metal test specimens

Use 200# abrasive paper (cloth) (B.3.13) to polish six metal test specimens (B.3.5) till they are smooth and bright. The polishing direction is shown in Figure B.1. Meanwhile, polish four sides, corners and the hole. Clean the polished specimens with degreasing cotton (B.3.14) first, and then use the tweezers (B.3.4) to clamp the degreasing cotton to clean the specimens successively in acetone (B.2.7), anhydrous ethanol (B.2.8), and hot anhydrous ethanol (50°C ~ 60°C). Blow them dry with hot wind. Place in the dryer (B.3.15) for use.

them out slowly. After the dropping speed of the oil contamination is slow down, hang them back to the specimen shelf for 30min. When the oil contamination solidifies, take the test specimens down. Wipe off the redundant oil contamination at the lower end. Weigh the test specimens along with the S-shape hooks precisely with the analytical balance. Count it as m_1 . At this moment, the oil contamination mass of each group of metal test specimens shall be ensured to be between 0.05g ~ 0.02g.

Note: When immersing the metal test specimens into the oil, the oil temperature will reduce. In order to guarantee the oil-immersed temperature, insulation measures shall be taken.

B.4.4 Preparation of standard solution

Weigh 14 portions of sodium alkyl benzene sulfonate (B.2.11) (counted in 100%), 1 portion of sodium ethoxylated alkyl sulfate (B.2.10) (counted in 100%), 5 portions of anhydrous ethanol (B.2.8), and 5 portions of urea (B.2.9). Add water to be 100 portions. Mix them evenly. Adjust the pH to 7 ~ 8 with hydrochloric acid solution (B.2.5) or sodium hydroxide solution (B.2.6). Suck up 1mL of the solution into a 500mL volumetric flask (B.3.17). Dilute it with distilled water to the scale, for spare use.

B.4.5 Preparation of experimental solution

Take enough wet wipes' samples. Remove the outer packing. Wear clean PE (polyethylene) film gloves. Squeeze the solution in wet wipes into a 500mL beaker (B.3.6), for spare use. The solution volume is about 400mL.

B.4.6 Experimental procedure

B.4.6.1 Place the beaker (B.3.6) with 400mL of solution (B.4.5) into the thermostatic water bath (B.3.8) at $(30 \pm 2)^{\circ}\text{C}$. Keep the solution temperature at $(30 \pm 2)^{\circ}\text{C}$. Clamp the metal test specimens with oil contamination (B.4.3) on the swing shelf of the standard swing washing machine (B.3.2). Make the surface of specimens to be vertical to the swing direction. The oil-coated part shall be completely immersed in the solution, but it does not contact with the bottom and wall of the beaker. After steeping them in the solution for 3min, turn on the swing washing machine immediately for 3min. Then swing-wash them for 30s in 400mL of distilled water at $(30 \pm 2)^{\circ}\text{C}$. After the swing-washing, take the metal test specimens out. Hang them on the specimen shelf along with the S-shape hooks. Put the specimen shelf into the thermostatic drier box (B.3.11) at $(40 \pm 2)^{\circ}\text{C}$ for 30min. After drying, cool them to the room temperature. Weigh them along with the S-shape hooks. Count it as m_2 .

B.4.6.2 Put 400mL of standard solution (B.4.4) in the beaker (B.3.6). Then put the beaker in the thermostatic water bath at $(30 \pm 2)^{\circ}\text{C}$. Carry out detergency test of standard solution according to B.4.6.1.

B.4.6.3 Use the experimental solution and standard solution respectively to test three metal test specimens. Calculate the degreasing rates of the experimental solution and

C.2.3.1 Preparation of ceramic test specimens

Rinse three ceramic test specimens (C.2.2.4) with ceramic detergent (C.2.2.5) and dry them in air.

C.2.3.2 Preparation of experimental solution

Take enough wet wipes samples and remove the outer packing. Wear clean PE (polyethylene) film gloves. Squeeze the solution in wet wipes into a 100mL beaker (C.2.2.3), for spare use. The solution volume is about 80mL.

C.2.3.3 Test for ceramic causticity

C.2.3.3.1 Put the three rinsed ceramic test specimens (C.2.3.1) into the 100mL beaker with the experimental solution (C.2.3.2) and steep them for 4h.

C.2.3.3.2 Observe color change situation of the specimens surface and the experimental solution.

C.2.3.3.3 Use a pencil to scratch on the surface of specimens. Then use wet white cloth to wipe off the scratch.

C.2.4 Result assessment

C.2.4.1 If there is no color change and the scratch can be wiped off, then the specimen shall be determined as qualified. Otherwise, it is unqualified.

C.2.4.2 If two or more of the three specimens are unqualified, the item shall be determined as unqualified. If there is one specimen unqualified, test the three specimens again. After the re-test, if all the three specimens are qualified, the item shall be determined as qualified; otherwise, it is unqualified.

Annex D
(Normative)

Determination of Migratable Fluorescent Whitening Agent

D.1 Theory

Put the sample under ultraviolet lamp. Observing the fluorescence phenomenon and the migratable fluorescent whitening agent test, under the conditions of wave length of 254nm and 365nm respectively, to qualitatively determine whether there is migratable fluorescent whitening agent in the sample.

D.2 Reagents and materials

The instruments and materials used shall have no fluorescence phenomenon under ultraviolet lamp.

D.2.1 Distilled water or deionized water.

D.2.2 Gauze: 100mm x100mm.

D.3 Instruments and equipment

D.3.1 Ultraviolet lamp: with wave length of 254nm and 365nm, and eye-shield device.

D.3.2 Flat-base heavy object: with mass of about 1.0kg, base area of about 0.01m².

D.3.3 Glass dish.

D.3.4 Glass pane: smooth on the surface, 150mm x150mm.

D.4 Experimental procedure and result assessment

D.4.1 Put the sample under ultraviolet lamp to inspect whether there is fluorescence phenomenon. If the sample has no fluorescence phenomenon under ultraviolet lamp, then the sample shall be determined as without migratable fluorescent whitening agent. If the sample has fluorescence phenomenon under ultraviolet lamp, then carry out migratable fluorescent whitening agent test according to D.4.2.

D.4.2 Extract two pieces of wet wipes from any package (for single-piece package, the samples can be extracted from two packages). Overlap and place them flatly on the glass pane (D.3.4). Put the gauze (D.2.2) at the center position of the upper side of the wet wipes. And extract another two pieces of wet wipes. Successively cover the upper side of the gauze. And make sure that the gauze has been completely covered. Then put a glass pane (D.3.4) and a flat-base heavy object (D.3.2) successively on the upper side of the wet wipes. After pressing for 5min, take the gauze out and fold it evenly in four layers, and then put it on the glass dish (D.3.3). For each sample, carry out two parallel tests.

D.4.3 Carry out a blank test according to D.4.2. And replace the wet wipes with four pieces

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