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Eye massager for home and similar use

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preface

This document is drafted in accordance with the rules given in GB / T 1.1-2020 and GB / T 20001.10-2014.

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Eye massager for home and similar use

1. Scope

This document specifies the technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of eye massagers for household and similar uses (hereinafter referred to as appliances).

This document is applicable to eye massagers used in homes and similar places.

This document does not apply to an eye massager for medical and commercial purposes.

This document does not apply to the eye massage appliance with electric pulse principle.

2. Normative references to documents

The contents of the following documents constitute essential provisions in this document. Among them, the dated reference document, only the version corresponding to that date applies to this document, and the latest version (including all modification orders) applies to this document.

GB /T Environmental testing-Part 2: Test Methods Test Ec: Impact from crude operation (mainly for equipment-type samples)

GB/T Sampling Inspection Procedure-Part 1: Batch-by-batch inspection sampling plan retrieved by receiving quality limit (AQL)

GB / T 4214.1-2017 noise test method for household and similar appliances

GB 4343.1 GB /T 4343 GB 4706.1 GB 4706.10 GB /T 9286.2 Electromagnetic compatibility requirements for household appliances, power tools and similar appliances- -Part 1: Electromagnetic compatibility requirements for transmitting household appliances, power tools and similar appliances- -Part 2: Immunity Safety of appliances for household and similar uses- -Part 1: General requirements

Special requirements for safety massage appliances for household and similar electrical appliances

Color and varnish grid test

Special requirements for antibacterial materials with antibacterial, sterilization and purification functions for household and similar electrical appliances

GB 31241 Safety technical specification for lithium-ion batteries and battery

QB /T 4412 packs for portable electronic products

Handheld electric massager

3. Terms and definitions

GB 4706.1 and GB 4706.10 The defined terms and the following terms and definitions apply to this document.

3.1

Home and similar use Eye massager household and similar eye massager

The electric health massage device is driven by the pressure generated by the air bag, the pressure generated by the action of the mechanical device, and the heat generated by the heating device.

3.2

Automatic shutdown of the automat ic sto p

The appliance automatically after working to the specified time.

3.3

Massage at the timing of the ma ssage timing

The time from startup to normal operation automatic shutdown specified by the manufacturer for the appliance.

3.4

Airbag air pressure of airbag p ressure

Air pressure generated inside the airbag.

3.5

Hot compress temperature is he ating temperature

The surface temperature of the human body produced by the appliance heating device.

4. Requirements

4.1 General requirements

1) The appliance shall be opened under the condition of no external load. All functions shall conform to the use instructions, and the appliance shall operate normally and no different

Often sound.

2) The switch and functional control keys of the appliance should be flexible, reliable and have obvious control marks.

3) The appliance with a display device shall be clearly visible.

4) The structural parts of the appliance shall be firmly installed; the fasteners shall be locked without loosening, slipping and mutual interference.

4.2 Use environment

The appliance shall work properly under the following conditions:

1) Indoor or similar indoor environment, the surrounding air should be not flammable, corrosive gas and conductive dust;

2) Ambient temperature: 5℃ ~35℃;

3) Environmental relative humidity: not more than 90% RH;

4) Atmospheric pressure: 86 kPa ~ 106 kPa.

4.3 Appearance requirements

4.3.1 The outer surface of the appliance shall be clean and tidy without scratches, scratches, cracks and other visible defects.

4.3.2 The marking information of appliances and their accessories shall be clear and easy to read and durable for use.

4.3.3 The surface coating adhesion of metal parts and plastic parts of appliances shall meet the requirements of GB / T 9286 grade 2 or above..44

Safety requirements

4.4.1 The appliance shall comply with the specified requirements of GB 4706.1 and GB 4706.10.

4.4.2 Lithium-ion batteries and battery packs used in the appliance shall meet the specified requirements of GB 31241.

.34.4 The appliance shall not be able to start operation and operation during charging.

.44.4 The air pressure of the appliance shall not be greater than 78 kPa.

4.5 Electromagnetic compatibility

.5.14 Radiation harassment

In the no-load continuous operation state, the continuous harassment limits and intermittent harassment limits shall comply with the provisions of GB 4343.1.4.5.2 The immunity to disturbance

The appliance shall comply with the requirements of electrostatic discharge specified in GB / T 4343.2.

4.6 Health and safety requirements

.6.14 Anti-mildew requirements

The parts with nominal mold resistance shall comply with GB 21551.2, and the mildew prevention grade of the parts materials shall not be less than grade 1. Parts usually refer to the textile parts and appliance parts that come in contact with the human body when working.

.6.24 Antimicrobial requirements

The parts with nominal antibacterial properties of the appliance shall comply with the GB 21551.2 regulations, and the antibacterial rate of the parts and materials shall not be less than 90%. Parts usually refer to the textile parts and appliance parts that come in contact with the human body when working.

4.6.3 Requirements for the content of harmful substances

The limits of harmful substances in appliances shall comply with the limit requirements specified in GB / T 26572.4.6.4 Color fastness to sweat stains

The color fastness grade of textile parts in appliances shall not be less than grade 4.

4.6.5, Sweat resistance test

After the surface coating of the parts and in direct contact with the human body, the appearance has no change, no corrosion, discoloration, foaming, cracking, coating shedding and other abnormalities.

4.7 Performance requirements

.7.14 Massage timing

When the appliance is in full charge, the time of automatic shutdown from startup to normal operation shall meet the timing time specified in the use instructions and not be more than 15 minutes, and the timing error shall not be more than ± 2%.

.7.24 Automatic shutdown

The appliance should stop automatically after reaching the massage time.

.7.34 Hot compress temperature

When the appliance has the hot compress function, the hot compress temperature shall meet the specifications specified by the instructions for use, and the surface temperature of the parts in contact with the human body shall not exceed 43℃.

.7.44 Work noise

When the appliance is in full charge state, various functional states (excluding music playing state) shall be opened under the condition of no added load, and the sound power level noise shall not be greater than 55 dB (A weight).

4.7.5, low power prompt

The appliance shall have a low power prompt, which may include but not limited to sound, light and vibration.

.7.64 Working life

The working life of the appliance shall not be less than 250 hours, and the appliance shall still work normally after the life test.

.7.74 Keys life

The life of the mechanical button of the appliance should not be less than 10000 times, and the appliance button should still work normally after the life test.

4.7.8 Pull life of charging port

The plug and pull life of the appliance charging port shall not be no less than 1000 times, and after the life test, the appliance charging port shall be contact well and the charging function is normal.4.7.9 Drop (bare machine)

The appliance (bare machine) shall work normally after the drop test.

4.7.10 Drop (Packaging)

After the drop test, the appearance, structure and function of the appliance shall be abnormal.

5. Test method

5.1 General requirements

Check the flexibility of switch and function keys through visual inspection, manual and necessary special tools; shake the left and right objects; after tapping the appliance with hand, all functions shall be normal and there shall be no abnormal sound during operation.

5.2 Test conditions and instruments for test

.2.15 Test conditions

Except for special requirements, the test shall be conducted in the following environment:

1) When the appliance has a hot compress function: the ambient temperature (23 ± 2) is ℃, with no obvious air flow and thermal radiation effect.

2) When the appliance does not have a hot compress function: the ambient temperature (20 ± 5) ℃, no obvious airflow and thermal radiation effects.

3) Relative humidity: 45% RH ~ 85% RH.

4) Atmospheric pressure is 86 kPa ~ 106 kPa.

.2.25 Test instruments

Test instruments and instruments shall meet the requirements of Table 1.

Table 1 Accuracy of instruments and instruments

order number	name	Accuracy requirements
1	stopwatch	0.1 s
2	Data collector-temperature inspection instrument	0 ℃.1
3	Infrared thermal imager	0 ℃.1
4	Digital barometer	0.1 kPa
5	Noise tester	0.1 dB
6	Other test equipment	The test condition requirements shall be met

5.3 Visual inspection

5.3.1 Under the 40 W fluorescent light source, the surface of the inspected instrument is 45° Angle and the distance is 30 cm. The visual and feel inspection instrument shall meet the requirements of 4.3.1. The schematic diagram of the visual inspection is shown in Figure 1.

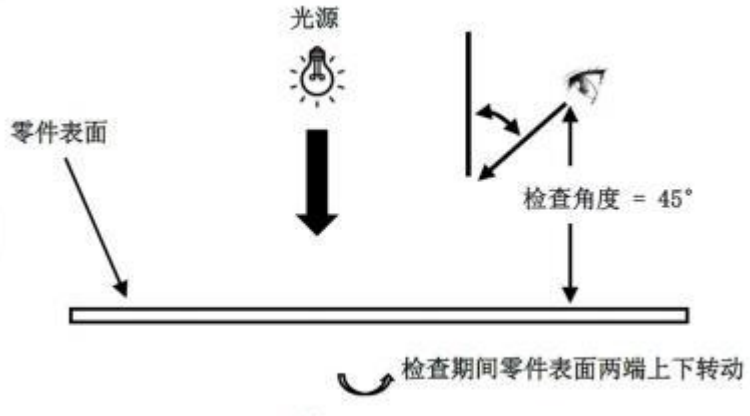


图 1

5.3.2 Conduct the mark wipe test according to the method specified in GB 4706.1.

5.3.3 Make the color paint marking test according to the method specified in GB / T 9286, and the test result shall not be less than Grade 2.

5.4 Safety test

5.4.1 Conduct the test according to the relevant methods specified in GB 4706.1 and GB 4706.10.

5.4.2 Conduct the test according to the relevant methods specified in the GB 31241.

5.4.3 Charging the appliance in any state, the appliance shall not operate and work, and the charging condition shall be normal.

5.4.4 Connect the barometer and the air bag and form a complete loop, start the appliance for working, and test the maximum pressure of each inflation of the appliance for working mode.

5.5 Electromagnetic compatibility test

.5.15 Radiation harassment

Test the radiation harassment limit according to the provisions of GB 4343.1.

5.5.2 The immunity to disturbance

Test the test according to the provisions of GB / T 4343.2.

5.6 Health and safety test

.6.15 Anti-mildew test

Test the parts of the appliance according to GB 21551.2.

.6.25 Antimicrobial test

Conduct antibacterial test on the parts with nominal antibacterial properties according to GB 21551.2.

5.6.3 Detection of harmful substances content

The restricted types and contents of harmful substances in the appliance shall be tested according to the method specified in GB / T 26125.

5.6.4 Color fastness test

1) Prepare PH 5.5 ± 0.2 and PH 8.0 ± 0.2 artificial sweat according to Appendix A.

2) Soak the white dust-free cloth in the acid or alkaline solution fully, and stick the dust-free cloth soaked with the acid or alkaline solution on the prototype with adhesive tape

Cover paint surface and ensure that the dust-free cloth is in full contact with the prototype shell paint surface and then placed in a (37 ± 1) ℃ incubator.

3) After 4 hours, remove the prototype from the constant temperature box: for the shell sample, rinse the product with water, place the ventilated place naturally cool dry or dry with soft dry cloth, and check the shell surface; for the textile cloth sample,

check the dyeing degree on the white dust-free cloth of the package sample, and confirm with a gray card.

.6.55 Sweat resistance test

1) Use PH 5.5 ± 0.2 and PH 8.0 ± 0.2 artificial sweat, with the sweat formula according to Appendix A.

2) Put the white dust-free cloth fully soaked in the acidic or alkaline solution, and stick the dust-free cloth soaked with the acidic or alkaline solution on the sample with adhesive tape

Cover paint surface and ensure that the dust-free cloth is in adequate contact with the sample cover paint surface and then placed in a (37 ± 1) ℃ incubator.

3) After 24 hours, take the sample from the incubator, rinse the product with clean water, place the ventilated place to cool and dry or dry with soft dry cloth.

4) Check the sample after drying for 2 hours at normal temperature.

5.7 Performance test

5.7.1 Massage timing test

Charge the appliance to full charge, and determine the time from startup to normal operation in each working mode.5.7.2 Automatic downtime test

In each working mode, the appliance checks whether the appliance stops automatically after reaching the massage time.

5.7.3 Temperature test of hot compress

At the ambient temperature of (23 ± 2) ℃, the appliance is charged to full charge. In each hot compress working mode, the temperature of the appliance is measured at the surface of the human body in the heating area, and the maximum temperature is recorded.

5.7.4 Working Noise test

Charge the appliance to full charge, conduct the installation before testing by the requirement of 6.5.2 in GB / T 4214.1-2017, open various functional states without applied load, test the noise value of 10 points on the hemisphere by the method specified in 7.1.4, correct the background noise and the test environment, obtain the average sound pressure level noise value of each measuring point, and the noise value of sound power level is calculated according to the formula listed in this chapter. For instruments with music playback function, the music playback sound is not in the test range.

.7.55 Low power level prompt test

Discharge the appliance. When the battery power is low, check for a low power state prompt.

5.7.6 Working life test

Record the life test procedure, in principle, select the maximum output power mode of the appliance; run automatically with the standard procedure (e. g., 10 minutes + 5 minutes suspended) to complete the cumulative working time of 250 hours; observe the running status of the appliance every day and make a record daily.5.7.7 Key-button life test

10000 press tests for the appliance keys.

5.7.8 Charging port plug and plug life

Fixed the appliance to avoid movement, and repeatedly plugged the charging port 1000 times at 10 to 25 times per minute.

5.7.9 Drop (bare machine) test

Test according to the method specified in GB / T 2423.7. Before the test, confirm that the appearance, electrical performance and mechanical performance of the tested appliance are qualified. Place the appliance 1m above the smooth, hard, rigid equipment surface made of concrete or steel, and make each fall of the appliance face down and fall freely, with each fall at least once. Falling surface generally refers to the upper, lower, left, right, front and back six surfaces of the appliance.

5.7.10 Drop (packaging) test

Conduct the test according to the methods specified in GB / T 4857.5 and GB / T 4857.18. Before the test, confirm that the appearance, electrical performance and mechanical performance of the tested appliance are qualified. Place the fully packaged appliance on a drop test machine made of concrete or steel

Smooth, hard, rigid equipment surface, the drop order is 1 corner, 3 sides and 6 sides (a total of 10 positions), each position drops 1 time.

6. Inspection rules

6.1, to test the classification

Inspection is divided into factory inspection and type inspection.

6.2, ex-factory inspection

6.2.1 Factory inspection items

The products proposed for delivery shall be inspected from the factory, and the inspection items shall be carried out according to the provisions in Table 3. The product shall pass the inspection by the quality department

Factory, and with quality inspection identification. The items of factory inspection shall at least include the appearance structure and basic functions, and the results of factory inspection shall be

All qualified.

Table 3. Items of the factory inspection

order number	inspecting item	ask	test method
1	Appearance structure	4.3.1	5.3.1
2	basic function	direction for use	actual operation
3	Product performance requirements (hot compress temperature, working noise)	4.7.3、4.7.4	5.7.3、5.7.4
4	Logo, packaging	7.1、7.2	7.1、7.2

6.2.2 Sampling scheme

The factory inspection shall be carried out according to the provisions of GB / T 2828.1, and the sampling inspection scheme and inspection level shall be regulated by the quality inspection department of the manufacturer itself

Fixed, samples were randomly selected from the product provided.

6.2.3 Judgment method

The receiving quality limit (AQL) of the factory inspection items shall be stipulated by the manufacturer's quality inspection department itself.

6.3, type test

6.3.1 Type inspection shall be performed when one of the following conditions occurs:

1) Before the new product is put into production;

2) When the old products are transferred to the production site;

3) After formal production, if the design, material, process and structure may affect the qualification of the appliance;

4) Normal batch production (once a year);

5) When the appliance resumes production half a year after the suspension of production;

6) When the State Administration for Market Regulation requires the type inspection.

6.3.2 The items of type inspection shall include GB 4706.1, Chapter 4 of this document. Except for new products, samples for type inspection shall be selected from the qualified products of routine inspection, and the quantity shall be determined by the enterprise.

7. Mark, packaging, transportation and storage

7.1 Logo

The nameplate and safety precautions of the appliance shall be located in obvious positions. The nameplate shall be smooth and legible, and the following contents shall be indicated:

1) Product name and model;

2) Name or trademark of the manufacturer;

3) Rated voltage, V (V);

4) Rated power in watt (W).

7.2 Packaging

7.2.1 The packaging shall be firm and reliable, prevent damage during transportation and take necessary moisture and dust proof measures.

7.2.2 The package shall be accompanied by the qualification certificate, use instructions, warranty card, etc.

7.2.3 The surface of the outer package shall indicate the following contents:

1) Product name and model;

2) Implement the standard number;

3) Batch number or production date of the product;

4) Address of the manufacturer and the manufacturer;

5) Gross weight and net weight, unit in kg (kg);

6) The external dimension of the packing box (length, width and height), measured in mm (mm).

7.3 Transportation

.3.17 During loading and unloading, light loading and unloading, rolling and throwing are strictly prohibited; violent vibration shall be prevented during transportation

Squtrusion, should be shelter, to prevent the sun and rain, not mixed with toxic, contaminated articles, to prevent the erosion of chemicals.

7.3.2 The transportation of lithium batteries shall meet the requirements of lithium battery transportation standards, and qualified transportation reports shall be provided when necessary.

7.4 Storage

The appliance shall be stored in a dry, well ventilated and free of corrosive gases. The stacking height shall not be higher than the number of stacking layers indicated on the box.

appendix A

(normalization)

Artificial sweat formulation

Artificial sweat contains alkaline and acidic test solutions as described in Table A.1 :

outside A.1 Artificial sweat formula

Alkaline test solution PH = 8.0 ± 0.2
The reagent used is chemically pure, equipped with GB / T 6682. Each liter of the test fluid contains: L-histidine hydrochloride monohydrate (C 6H 9O 2N 3 • HCL • H 2O)..... 0.5g Sodium chloride (NaCl).....5.0g Disodium hydrogen phosphate dohydrate (Na 2HPO 4 • 12H 2O)..... Of the 5.0g or Disodium hydrogen phosphate dihydrate (Na 2HPO 4 • 2H 2O) g·····2.5 Adjust the test solution PH with 0.1 mol / L sodium hydrogen solution to 8.0 ± 0.2.
Acid test solution PH = 5.5 ± 0.2
The reagent used is chemically pure, equipped with GB / T 6682. Each liter of the test fluid contains: L-histidine hydrochloride monohydrate (C 6H 9O 2N 3 • HCL • H 2O)..... 0.5g Sodium chloride (NaCl) g·····5.0 Disodium hydrogen phosphate dihydrate (Na 2HPO 4 • 2H 2O).....2.2g Adjust the PH with 0.1 mol / L to 5.5 ± 0.2.

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reference documentation

[1] GB 9706.1-2020 Medical electrical equipment- -Part 1: General requirements for basic safety and basic performance

[2] ISO 13732-1 Assessment method of human efficiency human reaction to surface contact-Part 1: Heating surface [3] GB / T 191 packaging storage and transportation diagram mark

[4] GB / T 1019 electrical rules for household and similar appliances

[5] Abraham JP, et al.Est imating the time and temperature relationship for causation of deep -partial thickness skin burns .Burns (2015)

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