# TEST REPORT
## EN 15426:2018 Candles – Specification for sooting behaviour
## EN 15493: 2007 Candles Specification for fire safety
## EN 15494: 2007Candles – Product safety labels

| | |
|---|---|
| **Report Number**.....: | **ATS221221036LR** |
| Date of issue.....: | Dec. 26, 2022 |
| Total number of pages..... | 15 pages |
| **Testing laboratory .....:** | Shenzhen ATS Testing Technology Co., Ltd. |
| Address .....: | Floor 3, Building C, 6373 Baoan Avenue, Fuhai Street, Baoan District, Shenzhen |
| Testing location .....: | As above |
| **Applicant's name**.....: | JiangXi Origin Aromatics Co., Ltd. |
| Address.....: | Qing Feng Road,Hedong Industrial Park,Qingyuan District,Ji'an City,JiangXi Prvince,China |
| Test specification: | |
| Standard.....: | EN 15426: 2018;<br>EN 15493: 2007<br>EN 15494: 2007 |
| Test procedure.....: | CE |
| Non-standard test method…….: | N/A |
| Test Report Form No.....: | EN 15426 |
| Test Report Form(s) Originator.....: | ATS |
| Master TRF.....: | N/A |
| **Test item description**.....: | Scented Candle |
| Trade Mark.....: | -- |
| Manufacture.....: | JiangXi Origin Aromatics Co., Ltd.<br>Qing Feng Road,Hedong Industrial Park,Qingyuan District,Ji'an City,JiangXi Province,China |
| Model/Type reference.....: | -- |
| Ratings.....: | -- |

| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): | | |
|---|---|---|
| ☒ Testing Laboratory: | Shenzhen ATS Testing Technology Co., Ltd. | |
| Testing location/ address..... | Floor 3, Building C, 6373 Baoan Avenue, Fuhai Street, Baoan District, Shenzhen | |
| Tested by (name + signature)..... | Damon Lee | |
| Approved by (name + signature)..... | Max Wang | |
| List of Attachments (including a total number of pages in each attachment):<br>Appendix 1: Product photos | | |

| **Summary of testing:** | | | | |
|---|---|---|---|---|
| **Tests performed (name of test and test clause):** | | | | **Testing location:** |
| 9.3 | Burning test | Applicable | Pass | 1) |
| 10 | Measuring the illuminance of the glass plate | Applicable | Pass | 1) |
| 4.1 | Stability | Applicable | Pass | 1) |
| 4.2 | Secondary ignition | Applicable | Pass | 1) |
| 4.3 | Flame height | Applicable | Pass | 1) |
| 4.4 | Behaviour by self-extinguishing at the end of the burning process | Applicable | Pass | 1) |
| 4.5 | Re-ignition after extinguishing | Applicable | Pass | 1) |

| | |
|---|---|
| Test item particulars.....: | |
| Temperature.....: | 25°C°C |
| Relative humidity.....: | 45-50％ |
| Atmospheric pressure.....: | (9.0±0.2)kPa |
| Mass of the equipment (kg).....: | See instruction |
| Possible test case verdicts: | |
| - test case does not apply to the test object.....: | N/A |
| - test object does meet the requirement.....: | P (Pass) |
| - test object does not meet the requirement.....: | F (Fail) |
| Testing.....: | |
| Date of receipt of test item.....: | Dec. 21, 2022 |
| Date (s) of performance of tests.....: | Dec. 21, 2022-Dec. 27, 2022 |

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

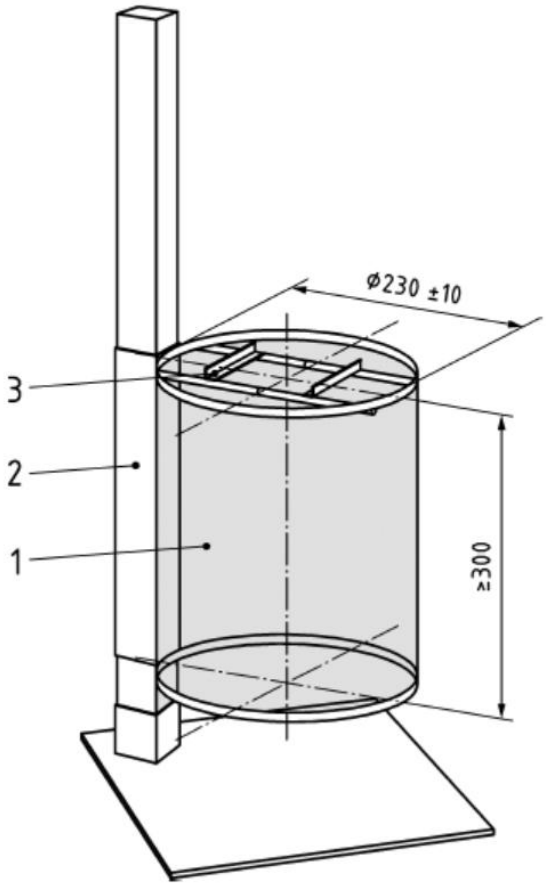
Clause numbers between brackets refer to clauses in report

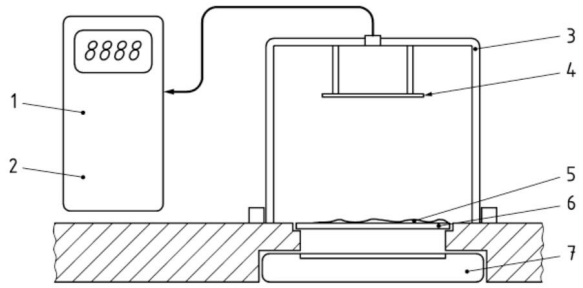
Attachment No. 1: 2 page of photo.

**General product information:**

Scented candles, See the picture.

| EN 15426 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| **Clause(s)** | **Test(s)** | **Test Remarks** | **Result** |
|---|---|---|---|
| 4 | Sooting behaviour | | P |
| | When tested in accordance with Clause 9, the average soot index per hour from three tests (samples) shall be less than 1,0/h. | 0,81/h | P |
| 5 | Test equipment and apparatus | | P |
| 5.1 | A wire mesh cylinder1) fixed to a stand of which the height can be adjusted, with a fixture for a glass plate (see Figure 1). The cylinder has a minimum height of 300 mm and consists of wire mesh with an open screening area of (60 ± 5) % | | P |
| |  | <70mm | P |
| 5.2 | Measurement unit consisting of an indication instrument and a measuring chamber. The measuring chamber consists of the light source, fixture for the heat resistant glass plate, a cover with light reflecting interior coating (at least 90 % reflectivity) with a photodiode integrated in it, which is connected with the indication instrument | | P |

| EN 15426 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| |  | | P |
| 5.3 | 100 mm × 100 mm, with a thickness of 3,5 mm to 4,5 mm. Each glass plate shall be marked in such a way that it can be easily identified and the marking does not affect the measurement results. The light absorption of these glass plates shall not exceed 25 %. $E$ is the individually measured illuminance.<br>$1-\frac{E_1}{E_0} \leq 0,25$ | | P |
| 5.4 | Stop watch. | | P |
| 5.5 | Balance, precision 0,1 g. | | P |
| 5.6 | Rule. | | P |
| 5.7 | Fat dissolving detergent. | | P |
| 5.8 | Lint free paper towels. | | P |
| 5.9 | Pair of scissors. | | P |
| 5.10 | Suitable candle holder. | | P |
| 5.11 | Additional stand for height adjustment. | | P |
| 5.12 | Calibration disk, made of dark neutral density glass (e.g. NG43)) having a wavelength independent optical absorption coefficient of (1,20 ± 0,10) $mm^{-1}$ and dimensions (20 ± 0,3) × (20 ± 0,3) × (2,4 ± 0,3) $mm^3$. | | P |
| 6 | Sampling | | P |
| | The test shall be carried out on finished candles representative of those intended to be supplied commercially. For the test result to represent a specific candle type, a minimum of three samples shall be tested. | 3 Samples | P |
| 7 | Sample preparation | | N/A |

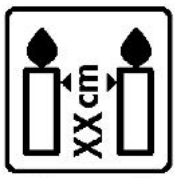
| EN 15426 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Remove any outer wrapping and label material and prepare the sample for use according to the manufacturer's instructions if any given, e.g. trim the wick. For identification of the sample, measure the dimensions and mass of the candle. The temperature of the sample shall be (20 ± 5) °C before the test is started. | | P |
| 8 | General test conditions | | P |
| | The room temperature at which the burning test is to take place shall be (20 ± 5) °C. The room shall be draught free. If during the test the temperature is outside the range, the maximum and/or minimum temperature shall be recorded in the test report. For testing floating candles, the temperature of the water shall be (20 ± 5) °C when the test is started. | | P |
| 9 | Test method | | P |
| 9.1 | General | | P |
| | In the case of candle designs not catered for in the test procedures, the test should be carried out as far as possible as described and deviations from the test procedure shall be recorded in the test report.<br>If sooting becomes excessive the measuring may be stopped early. | | P |
| 9.2 | Test preparation | | P |
| | The wire mesh cylinder type shall be selected according to Table 1. The diameter of the candle is measured at the largest cross-section at any point from 50 mm below the bottom of the cylinder to the top of the candle when the candle is placed in correct position for the test,<br>as the air exchange within the cylinder would otherwise be hindered. For non-circular candles the cylinder is selected based on the same cross-section as for the diameter of a circular candle, see Annex C. | | P |
| | Ø ≤ 70 mm, Wire mesh cylinder Type 1 (Diameter: (230 ± 10) mm) | Ø=50mm | P |
| | 70 mm < Ø ≤ 100 mm, Wire mesh cylinder Type 2 (Diameter: (300 ± 10) mm) | | N/A |
| | Set up the apparatus on an even surface and select a heat resistant surface or base for the candle to stand on. | | P |
| 9.3 | Burning test | | P |

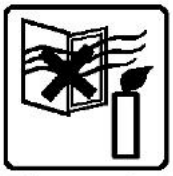
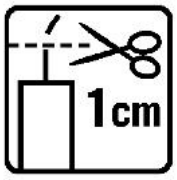
| EN 15426 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Place the candle in an upright position on a heat resistant, non-flammable surface. Non-freestanding candles are placed in a suitable candleholder which does not affect the burning properties of the candle4). Freestanding candles are placed on a surface that does not affect the burning properties5). Floating candles are placed in a suitable bowl filled with water. The bowl is made from a heat resistant material in a size so that the floating candle is kept in position under the glass plate during the entire test and filled with water to a level less than 1 cm below the rim. The measuring periods are carried out without extinguishing the candle after the stabilizing period. Position the wire mesh cylinder centrally above the sample. Adjust the distance (l2) between the top of the solid base material and the glass plate to a minimum of 180 mm (see Figure 3). A gap (l1) of at least 50 mm shall remain between the bottom of the cylinder and the surface the candle is positioned on. If the gap is smaller the candle shall be placed on a stand to put it in a higher position. The diameter of this stand (l3) shall not exceed 1/3 of the diameter of the wire mesh cylinder, as the air exchange within the cylinder would otherwise be hindered (see Figure 3). Position the wick in an upright position and light the candle. After the stabilizing period, place a cleaned glass plate in the holder of the wire mesh cylinder. The test cycles shall be chosen for different candle types according to Table 2. If the distance between the surface of the molten fuel pool and the glass plate (l2) exceeds 240 mm during the burning, adjust accordingly. When the measuring period ends, remove the glass plate before extinguishing so that smoke from the afterglow does not affect the test result. Record the start and end times of the stabilizing periods, measuring periods and pauses. Check the distance between the top of the solid base material of the candle and glass plate prior to each test period and adjust to a minimum of 180 mm, if necessary. The stabilizing period takes place without the glass plate.<br>When the measuring periods are complete, remove the glass plate before extinguishing the candle and allow the glass plate to cool down. | $L_2$=240mm | P |
| | Mass above 25 g and a diameter less than 70 mm(excluding container candles) | | P |
| | (5 ± 1) min | | P |
| | (240 ± 5) min | | P |

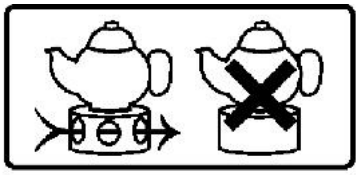
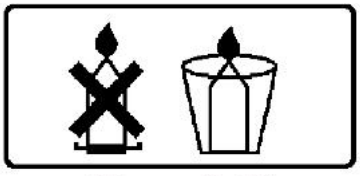
| EN 15426 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | > 60 min | | P |
| | (5 ± 1) min | | P |
| | (240 ± 5) min or continuous burning to residual height of (10 ± 5) mm if the remaining burning time is less than 240 min | | P |
| 10 | Measuring the illuminance of the glass plate | | P |
| | Place the sooted glass plate, with the sooted side up, within the holder on the light source and close the cover. If necessary, adjust the measuring range, determine the illuminance of the sooted glass plate (E3) and record the result. | | P |
| | Clean the glass plate with detergent (5.7) and water and dry the glass plate (5.3) afterwards using lint free paper towels (5.8). | | P |
| | Place the cleaned glass plate (5.3) on the light source and close the cover. | | P |
| | Determine the illuminance of the cleaned glass plate (E1) and record the result. | | P |
| 11 | The soot index is calculated according to Formula (2) made up of the ratio of the illuminance (E) resulting from the measurements of the sooted glass plate (E3) / cleaned glass plate (E1). | | P |
| | $Si = \left(1 - \frac{E_3}{E_1}\right) \times 100$ | 5 | P |
| 11.2 | The average soot index per hour is calculated as the ratio of the soot index to the total measuring time (sum of measuring periods) according to Table 2. The average soot index per hour is recorded in accordance with Formula (3). | | P |
| | $Si_h = \frac{Si}{t_m}$ | 0,83, 0.79, 0.81<br>T=6h | P |
| 11.3 | The average soot index per hour for 3 samples is calculated according to Formula (4). | | P |
| | $Si_{h1,2,3} = \frac{Si_{h1} + Si_{h2} + Si_{h3}}{3}$ | 0,81<1,0/h | P |

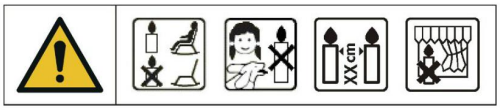
| EN 15493 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| EN 15493 | | | |
| 4 | Safety requirements | | P |
| 4.1 | Stability | | P |
| | Free-standing candles shall not tip over when tested on a slope of 10 ° | No dumping | P |
| 4.2 | Secondary ignition | | P |
| | No secondary ignition shall occur for more than 10 s, when the candle is burned | <4s | P |
| 4.3 | Flame height | | P |
| | The flame height for all candle types, except tea lights, shall not exceed 75 mm. The flame height for tea lights shall not exceed 30 mm. | 10-20mm | P |
| 4.4 | Behaviour by self-extinguishing at the end of the burning process | | P |
| | Container candles and candles marketed as self-extinguishing shall, at the end of the burning time, self extinguish and, in the case of container candles, not cause the container to break. | end of the burning,<br>the container no break, | P |
| 4.5 | Re-ignition after extinguishing | | P |
| | The wick shall not continue to glow or smoke for more than 20 s after extinguishing. After extinguishing the candle shall not spontaneously re-light. | the candle not spontaneously re-light,<br>No continue to glow or smoke | P |
| 5 | Test equipment and apparatus | | P |
| 5.1 | Incline plane (fixed or adjustable) with an angle of (10 ± 0,2) ° from a horizontal level. | | P |
| 5.2 | Measuring device, non-flammable with millimetre grading. | | P |
| 5.3 | Candle extinguisher, type “snuffer”. | | P |
| 6 | Sampling | | P |
| | The test shall be carried out on finished candles representative of those intended to be supplied commercially.<br>For the test result to represent a specific candle type, a minimum of 3 samples shall be tested. | | P |
| 7 | Sample preparation | | P |

| EN 15493 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Remove any outer wrapping and label material and prepare the sample for use according to the manufacturer's instructions, if any given, e.g. trim the wick. For identification of the sample, measure the dimension and the mass of the candle. The temperature of the sample shall be (20 ± 5) ° C before the test is started. | | P |
| 8 | General test conditions | | P |
| | The room temperature at which the burning test is to take place shall be (20 ± 5) °C. The room shall be draught free. If during the test the temperature is outside the range, the maximum and/or minimum temperature shall be recorded in the test report. | | P |
| 9 | Test methods | | P |
| 9.1 | General | | P |
| | In the case of candle designs not catered for in the test procedures, the test should be carried out as far as possible as described and deviations from the test procedure shall be recorded in the test report. | | P |
| 9.2 | Place the prepared, unlit candle on an incline plane (5.1) in the orientation most likely to cause tipping at (10 ± 0,2) ° from level. Rotation around the candle's vertical axis may be necessary to determine the stability of an asymmetrical candle. | | P |
| 9.3 | Burning test | | P |
| 9.4 | Flame height | | P |
| | The flame height (whole visible part of the flame, see 3.6) is measured and recorded 5 min after ignition and before extinguishing in each burning period. If the flame appears to approach the maximum allowable flame height at other times, it shall also be measured and recorded. For candles with a total burning time less than one specified burning period, the flame height is measured and recorded at least twice. | | P |

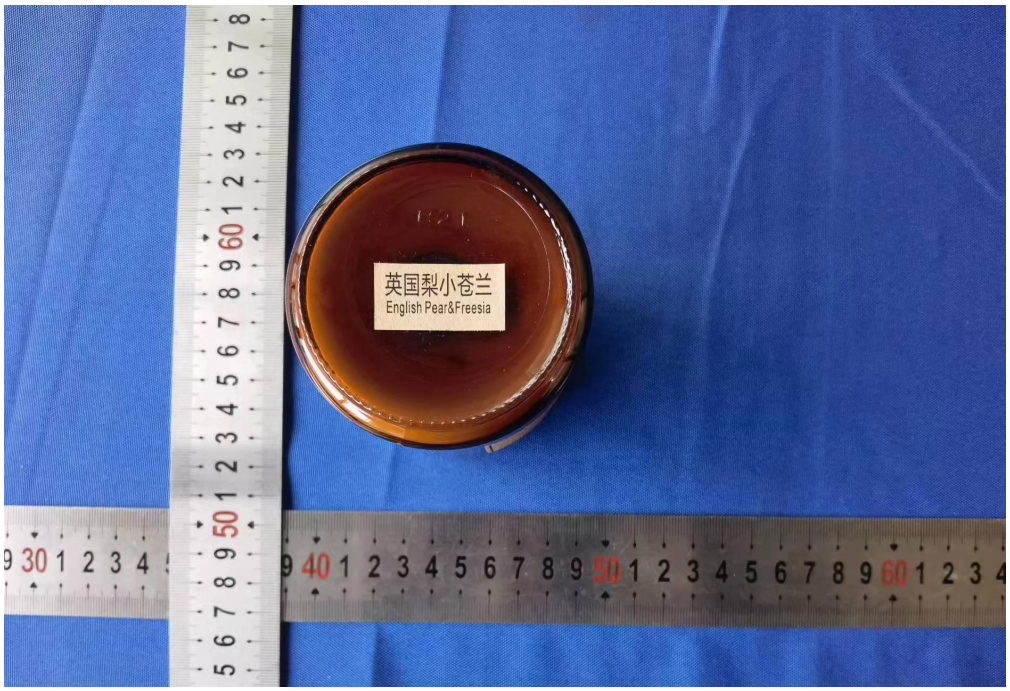
| EN 15494 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2 | Product safety labels | | P |
| 2.1 | Safety information | | P |
| |  <br>Figure 1<br>Never leave a burning candle unattended | | P |
| |  <br>Figure 2<br>Burn candle out of the reach of children and pets | | P |
| |  <br>Figure 3<br>Always leaveat least xx cm between burning candles | | N/A |
| |  <br>Figure 4<br>Do not burn candles on or near anything that can catch fire | | P |
| 2.2 | Layout of a product safety label | | P |
| | Form 1: General warning sign and supplementary safety information symbol | | P |
| | Form 2: General warning sign and supplementary safety information test | | N/A |

| EN 15494 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| |  | | P |
| |  Figure A.1 Don not place candles in the draught. | | N/A |
| |  Figure A.2 Don not place candles near a source of heat | | N/A |
| |  Figure A.3 Place candles in an upright position | | N/A |
| |   Figure A.4 Trim wick to about 1cm before lighting | | P |
| |  Figure A.5 Always snuff out the flam. Do not blow it out. | | N/A |

| EN 15494 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| |  <br>Figure A.6<br>Always use candleholder. | | N/A |
| |  <br>Figure A.7<br>Keep the wax pool clear of matches and other debris to avoid flaring | | N/A |
| |  <br>Figure A.8<br>Only use tea light in holders and warning stoves with sufficient ventilation. | | N/A |
| |  <br>Figure A.9<br>Do not move a burning candle | | N/A |
| |  <br>Figure A.10<br>Use a suitable container as these candles liquefy when burning. | | P |
| |  <br>Figure A.11<br>Never use liquid to extinguish | | N/A |

| EN 15494 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | **Examples of product safety labels on candle fire safety**<br>  | | P |

## Photos


英国梨小苍兰
English Pear&Freesia


Aroma Sensation
SCENTED CANDLE
NATURAL SOY WAX
Everything that you have experienced and the things to come will be discovered in the philosophy of byrne
This product is designed and made with love and sincerity.It is our desire and honor to be able to share this joy of creation with you.


*******End of Test Report*******