

## Test Report

No.: TJHL1906003067CW

Date: JUL.16, 2019

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PHOTO USA ELECTRONIC GRAPHIC INC.

8 DONGDAQIAO ROAD, STE, 2716, THE SPACES INT'L CENTER

The following sample(s) was/were submitted and identified by the client as:

Sample Description : 11OZ TWO TONE MUG-INNER&HANDLE COLOR RED  
 Supplier : PHOTO USA  
 Manufacture : PHOTO USA  
 Country of Origin : CHINA  
 Sample Receiving Date : JUN.26, 2019  
 Testing Period : JUN.26, 2019 TO JUL.16, 2019  
 Test Performed : SELECTED TEST(S) AS REQUESTED BY APPLICANT  
 Test Requested : PLEASE REFER TO THE RESULT SUMMARY.  
 Test Result(s) : FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)  
 Test Summary :

Test Requested	Conclusion
EN 15284: 2007 MATERIAL AND ARTICLES IN CONTACT WITH FOOD STUFFS - TEST METHOD FOR THE RESISTANCE TO MICROWAVE HEATING OF CERAMIC, GLASS, GLASS-CERAMIC OR PLASTICS COOKWARE	PASS

Signed for and on behalf of  
 SGS-CSTC Standards Technical Services (Tianjin) Co., Ltd.

*Michael*



Michael Wen  
 Authorized Signatory



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### Test Conducted:

#### **EN 15284: 2007 Material and articles in contact with food stuffs - Test method for the resistance to microwave heating of ceramic, glass, glass-ceramic or plastics cookware**

1) Scope: The European Standard specifies a method for the determination of the resistance to microwave heating of cookware made of ceramic, glass, glass – ceramic or plastics.

It is applicable to articles that are intended for multiple re-use in a microwave oven. It is not applicable to articles, particularly those made from plastics, which are intended to be discarded after one use.

2) Product Category: Ceramic

3) Number of tested sample: 4 pieces

4) Procedure

Clause	Test item	Test method/Requirement
5.1	Determination of power output	<p>At the start of the test ensure that the oven is at ambient temperature of <math>(20 \pm 3) ^\circ\text{C}</math>, and measure that temperature. Add <math>1000 \text{ g} \pm 5 \text{ g}</math> of water to the container and determine its actual mass. Cool the container and water to <math>(5 \pm 1) ^\circ\text{C}</math> below ambient temperature. Stir the water, measure its temperature and immediately place the container in the centre of the oven on the turntable at its lowest normal position. Operate the oven until a temperature <math>(5 \pm 1) ^\circ\text{C}</math> above ambient temperature is obtained and record the time of operation. Measure the temperature of the water and container within 60 s of the oven being switched off.</p> <p>The microwave power output shall be calculated using the following equation:</p> $P = \frac{4,187 \times \Delta T}{t} (m_w + 0.55m_c)$ <p>Where</p> <p>P is the microwave power output in Watts;</p> <p><math>\Delta T</math> is the difference between the initial and final water temperature;</p> <p>t is the time in seconds;</p> <p><math>m_w</math> is the mass of water in grams;</p> <p><math>m_c</math> is the mass of the container in grams.</p>



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Clause	Test item	Test method/Requirement
5.2	Determination of heating time	<p>Once the power output has been determined, calculate the times needed to give an energy value of 72 000 J for the short period and 468 000 J for the long period of test using the following equation:</p> $t = E/P$ <p>Where</p> <p>t is the time required in seconds;</p> <p>P is the microwave power output in Watts;</p> <p>E is the energy required in Joules.</p>
6.1	Testing of product	Apply a stain to the surface of the test specimen and wash clear.
6.2		Visually check that the surface is not damaged. Note any small faults (e.g. pinholes in the glaze) prior to testing.
6.3		Except for articles made from glass or glass-ceramic, immerse the test specimen in water at a temperature of $(20 \pm 3) ^\circ\text{C}$ for one hour and then wipe the surface dry with a cloth.
6.4		Pour $(125 \pm 2.5)$ ml of water into each water container and place at the back of the oven so as not to interfere with the turntable.
6.5		Place the test specimen at the centre of the oven on the turntable and microwave for the time determined in 5.2 to apply the specified energy for the short period. If electrical arcing begins IMMEDIATELY SWITCH OFF THE OVEN. Terminate the test and state in the test report that at the onset of electrical arcing the test was terminated.
6.6		After the cycle is completed, open the oven door and, if applicable, using the surface temperature measuring apparatus, find and record the highest temperature of the handle. When additional data is required, follow this procedure to find the highest surface temperature. Ensure that this process takes no longer than 45 s.



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Clause	Test item	Test method/Requirement
6.7		Immediately following 6.6, set the oven for the long period determined in 5.2 and restart.
6.8		After completion, when additional data is required, record the highest surface temperature (in no more than 45 s). Remove the test specimen from the oven and allow it to cool on an insulated surface to prevent thermal shock.
6.9		Apply stain to the test specimen and wash clear (as in 6.1).
6.10		Visually inspect the test specimen for damage according to the criteria in Table 1.
6.11		Repeat the test using the different article shapes in the set.

### 5) Test result:

For short heating period:

	Sample 1	Sample 2	Sample 3
The maximum handle temperature	36.0°C	36.7°C	35.9°C
Damage	Pass	Pass	Pass
Arcing	Pass	Pass	Pass
Temperature limits	56°C	56°C	56°C

The maximum surface temperature of handles after the short period heating shall not exceed the following limit values:

ceramic, glass-ceramic or glass: 56°C;

plastics: 60°C.



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For long heating period:

	Sample 1	Sample 2	Sample 3
Damage	Pass	Pass	Pass
Arcing	Pass	Pass	Pass

### Note:

Table 1 – Inspection criteria

Material	Cracking	Crazing	Scaling	Colour	Melting	Deform action	Suitability for re-use	Charring
Ceramic	+	+(a)	+(b)	+(c)				
Glass, glass-ceramic	+		+(b)	+(c)				
Plastics	+			+(c)	+(d)	+	+(e)	+
(+) = to be inspected a refers to the glaze b refers to on-glaze decoration c if several colours are present on one article to be inspected, the colour with the greatest change shall be chosen d article shall not be too soft to handle e article shall be washable and stain resistant								

### Remark:

Pass = No damage, arcing was found and the highest temperature for each item was within the temperature limit.



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### Sample Photo:



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\*\*\*End of Report\*\*\*



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