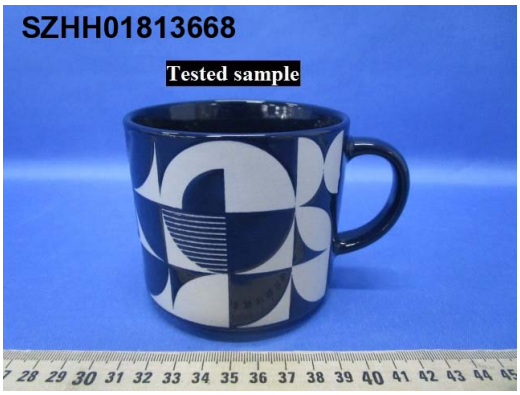
Test Report Number: SZHH01813668

Applicant: Date: Jun 15, 2023

Sample Description:

Twenty-six (26) pieces of submitted sample said to be :

Item Name	:	**Stoneware Mug**
Reference Item No	:	--
P. O. No.	:	HM22214
Manufacturer	:	Shen Zhen Hua Mei Industry Development Ltd
Buyer	:	
Country of Origin	:	China
Country of Destination	:	
Date Sample Received	:	Jun 05, 2023
Testing Period	:	Jun 05, 2023 ~ Jun 15, 2023



Tests conducted:

As requested by the applicant, refer to attached page(s) for details.

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Conclusion:

Tested Sample	Standard	Result
Submitted samples	CERAM PT 32 determination of handle strength of ceramic hollowware articles	Pass
	Thermal shock test - EN 1183 : 1997 Test method B	See test conducted
	BS EN 15284:2007 Materials and articles in contact with food stuffs - test method for the resistance to microwave heating of ceramic, glass, glass-ceramic or plastic cookware.	Pass
	BS EN 12875-4: 2006 Mechanical Dishwashing Resistance of Utensils – Part 4: Rapid Test For Domestic Ceramic Articles	See test conducted
Tested Sample	**Standard/Testing Item**	**Result**
Tested component(s) of submitted samples	Leachable Lead and Cadmium content -Drinking Rim	See test conducted
	The Materials and Articles in Contact with Food (England) Regulations 2012 (Statutory Instruments 2012 No. 2619) and British Standard BS 6748: 1986+A1: 2011 for ceramic ware	Pass

Authorized by:
For Intertek Testing Services Shenzhen Ltd.

INTERTEK TESTING SERVICES SHENZHEN LTD. 深圳天祥质量技术服务有限公司 检验检测专用章 (1)

Rachel L. Guo
General Manager

Intertek Testing Services Shenzhen Ltd.
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Tests Conducted

1 Handle Impact Strength

Test standard : CERAM PT 32 determination of handle strength of ceramic hollowware articles.

Test procedure:
1. The half way point of the handle between the upper and lower attachment of the submitted sample was initially marked.
2. The sample was placed in the position with the side of the handle facing toward the tup of the pendulum impact tester, so that the tup touched the marked point of the handle whilst hanging freely.
3. The tup was lifted to the height corresponding to the chosen energy of impact and then released to fall freely at the side of the handle.
4. The above steps were repeated such that the sample was subjected to impact with increments energy level until failure occurred.
5. Any failure, e.g. crack and breakage or whose handles break, was recorded and impact energy to failure was calculated and reported in the test result.

Number of samples tested: Three (3) pieces.

Requirement:
The samples must meet the requirements of BSI PAS 54:2003.Clause 4.1.3.2 (The average impact energy to produce handle failure shall not be less than 0.05 J (0.04 ft·lbf)).

Result:
The individual and average impact energies to produce initial fracture were recorded as follows:

Specimen	Impact energy (J)	Nature of failure
1	0.443	Handle cracked
2	0.328	Handle cracked
3	0.328	Handle cracked
Average	0.366J	

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Tests Conducted

2 Thermal Shock Test

Test standard: EN 1183 : 1997 – materials and articles in contact with foodstuffs – test methods for thermal shock and thermal shock endurance.

Test procedure :

1) Test method B as specified in the standard was adopted for the test.
2) The sample was initially heated in an oven set to 60°C for 30 minutes.
3) It was then transferred to cold water at 20°C and immersed for a period of approximately 1 minute.
4) The above steps were repeated except that the temperature of the oven was increased by:
   - 10°C for temperature difference ≤ 100°C
   - 20°C for temperature difference > 100°C
5) The test completed when failure occurred on all tested specimens.
6) The cumulative failure in % and the standard deviation were determined.

Number of samples tested : Ten (10) pieces

Requirement: Not specified

Result :

Temperature in oven (°C)	Temperature difference (°C)	Number of failure	Cumulative failure in %
60	40	0	0
70	50	0	0
80	60	0	0
90	70	0	0
100	80	0	0
110	90	0	0
120	100	0	0
140	120	0	0
160	140	1	10
180	160	6	70
200	180	3	100

The temperature difference $\Delta(t_{50})$ at which 50% of the tested samples failed and its standard deviation :

Sample	Δt_{50} (°C)	Standard deviation (°C)
Mug	153.3	12.6

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Tests Conducted

3 Resistance to Microwave Heating

Test standard : BS EN 15284 : 2007 Materials and articles in contact with food stuffs - test method for the resistance to microwave heating of ceramic, glass, glass-ceramic or plastic cookware.

Test procedure:
1) The submitted sample was immersed in a staining solution (1% aqueous solution of methylene blue), washed clear and then visually checked for any damage.
2) Except those made of glass or glass-ceramic, the sample was immersed in water (20°C) for 1 hour and wiped dry.
3) Two beakers (with 125 mL of water each), were placed at the back corners of the microwave oven but not disturbed the turntable.
4) The sample was heated at the centre of the turntable of the microwave oven (650 watts power output) for a duration of 1 minute 50 seconds (short period heating).
5) The highest temperature of the handle (if any) was immediately measured. for those without handle, the highest temperature at other position was measured and reported as a reference.
6) The sample was immediately reheated for another 12 minutes (long period heating) and the temperature was measured again.
7) Once it was cooled down, aqueous solution was applied to the sample surface again and observation was made again for any sign of damage.

Requirement:
1) The sample shall have no sign of damage after testing.
2) The highest surface temperature of handles (if any) after the short period heating shall not exceed the limits:
   - Ceramic, glass-ceramic or glass: 56°C
   - Plastic: 60°C

Number of samples tested : Three (3) pieces plus one (1) piece as control sample.

Result:

(1) No visible damage was observed on all the tested samples after testing.
(2) The highest surface temperature after the microwave heating was measured as follows:

Highest Surface Temperature (°C) at Handle		
Sample No.	Short period heating	Long period heating
1	38.3°C	79.7°C
2	37.9°C	87.5°C
3	39.5°C	83.2°C

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Tests Conducted

4 Mechanical Dishwashing Resistance of Utensils

Test standard : BS EN 12875-4 : 2006 mechanical dishwashing resistance of utensils - part 4 : rapid test for domestic ceramic articles.

Test procedure :

(1) The sample was washed in warm water containing a small amount of non-aggressive hand dishwashing detergent, then rinsed and dried before visual inspection for any damage.
(2) The sample was immersed in 0.5% detergent solution (75+/-1°c) for 16 hours, rinsed in warm water and compared with the control sample in respect to its gloss and color using the rating scheme as stated in this report.
(3) Step (2) was repeated for a further 16 hours in using a fresh detergent solution.

Number of sample tested : Three (3) pieces plus one (1) piece as control sample.

Result:

After 16 hours immersion

The tested specimens showed no sign of change in color and gloss surface.

After 32 hours immersion

The tested specimens showed no sign of change in color and gloss surface.

Average rating :
Classification is referenced to EN 12875-2, evaluation of inspection criteria :

Classification	Rating
0	No visible change
1	First discernible change
2	Clearly visible change

Inspection criteria	Classification	
	After 16 hours	After 32 hours
Color	0	0
Gloss	0	0

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Tests Conducted

5 Leachable Lead and Cadmium Content - Drinking Rim

With reference to ISO 6486-1:2019 by Inductively Coupled Plasma Mass Spectrometry, Flame Atomic Absorption Spectrometry, Inductively Coupled Optical Emission Spectrometry analysis.

(1) Mug.

Test Item	Result			
	Internal Volume ml	Leaching Volume ml	Lead mg/article	Cadmium mg/article
1	400	310	ND	ND
2	400	310	ND	ND
3	400	310	ND	ND
4	400	310	ND	ND

ND = Not Detected

6 Leachable Lead and Cadmium Content – Internal Contact Surface

With reference to the Materials and Articles in Contact with Food (England) Regulations 2012 (Statutory Instruments 2012 No. 2619) and BS 6748: 1986+A1:2011 by Atomic Absorption Spectrophotometric analysis.

(1) Mug.

Test Item	Result			
	Internal Depth mm	Leaching Volume ml	Leachable Lead mg/l	Leachable Cadmium mg/l
1	76	400	ND	ND
Category	-	-	2	2
Limit	-	-	4	0.3

ND = Not detected
Detection limit means limit of quantification
Detection limit:
Lead (Pb) = 0.05 mg/l
Cadmium (Cd) = 0.02 mg/l

Component List

No.	Test Component Description(s)
(1)	Mug.

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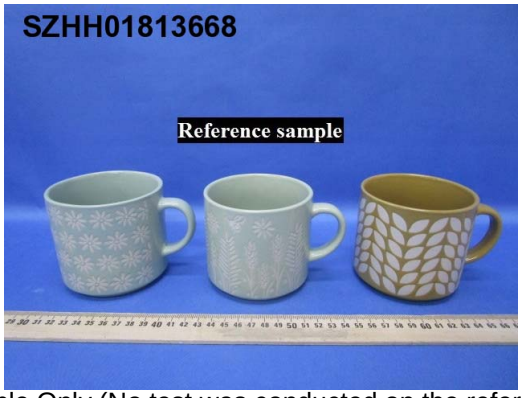

Reference Sample Only (No test was conducted on the reference sample(s))

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End of report

*The statements of conformity reported have considered the decision rule agreed, namely that Intertek have taken account of measurement uncertainty as calculated by Intertek, and applied according to ILAC-G8/09:2019 (Non-binary acceptance based on guard band **w** = **U**) except designation from the customer, regulation or test specification.This decision rule only applies to the numeric test results.*

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