

Test Report

Number: 170802404SHA-008

Applicant: Ningbo Yutong Electric Appliance Co., Ltd
Ningbo Jintong Electric Appliance Co.,Ltd.
Hudi Village, Linshan Town Yuyao City, Zhejiang P. R. China

Date: Dec 29, 2017

Sample Description:

One(1) piece of submitted sample said to be :

Item Name : PORTABLE FREEZER
Testing Model : YT-B-50P
Reference Model : YT-B-aaPX, YT-B-aaPJ(aa=35,45,50,55,65,75),
YT-B-bbPN(bb=20,30,40,50,60,70,80,90),
YT-B-ccP(cc=12,16,20,30,35,40,50),
YT-B-ddS (dd=45,55,65,80,100,130) ,
YT-B-eeD, YT-B-eeDX(ee=45,55,65,75,90,120)
Material : (1)Grey PP (2)White PP (3)Stainless steel 304 (4)White PE (5)Grey ABS
(6)Aluminum (7)White ABS

Tests Conducted:

As Requested By The Applicant, For Details Refer To Attached Page(S)

To be continued

Authorized By:
For Intertek Testing Services Ltd, Shanghai



Jonny Jing
Operation Manager



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Tests requirement:

According to the test results of below test parameters, the food contacting components of submitted sample need complied with the suggested food contacting testing parameters for German §30 and §31 LFGB and also need complied with general requirement of regulation EC 1935/2004 article 3,paragraph 1.

Tests conducted:

Based on the assessment of the submitted sample and the information provided, the following tests had been conducted:

- 1) Sensory test on finished product
- 2) Global migration on plastic
- 3) Specific migration of heavy metal on plastic
- 4) Specific migration of primary aromatic amines on plastic
- 5) Specific migration of acrylonitrile on plastic
- 6) Specific Migration of Butadiene
- 7) Total Butadiene content
- 8) Volatile organic matter and peroxide residues on plastic
- 9) Total polycyclic aromatic hydrocarbons on plastic and silicone rubber
- 10) Total lead and cadmium content on plastic and silicone rubber
- 11) Determination of heavy metal release on metal part

Tests Conclusion:

Tested Sample	Standard	Result
Tested Components of submitted sample	Sensory Analysis - Odour Test and Off-Taste Test	Pass
	European Commission Regulation No. 10/2011, Amendment (EU) 2016/1416 of 24 August 2016 and Regulation No. 1935/2004- Overall migration	Pass
	European commission regulation NO. 10/2011 annex II, Amendment (EU) 2016/1416 of 24 August 2016 and regulation 1935/2004- specific migration of heavy metal.	Pass
	European commission regulation NO. 10/2011 annex II, Amendment (EU) 2016/1416 of 24 August 2016 and Regulation 1935/2004- specific migration of Primary Aromatic Amines	Pass
	European commission regulation NO. 10/2011 and Amendment (EU) 2016/1416 of 24 August 2016- specific migration of Acrylonitrile	Pass
	European commission regulation NO. 10/2011 and Amendment (EU) 2016/1416 of 24 August 2016- specific migration of Butadiene	Pass
	European commission regulation NO. 10/2011 and Amendment (EU) 2016/1416 of 24 August 2016- Butadiene content in materials and articles	Pass
	German food, commodities and feeding act(LFGB), plastic recommendation V / VI, XV requirement on Volatile Organic Matter and Peroxide Residues in Polystyrene / Styrene Copolymers	Pass
	LFGB requirement on total PAHs content	Pass
	Total Lead and Cadmium content	Pass
	EU Technical Guide Council of Europe Resolution CM/Res (2013) 9 on metals and alloys Used in Food Contact Materials and Articles on specific migration of heavy metal	Pass

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1) Sensory Evaluation

With reference to §64 LFGB I00.90-6.

Test procedure:

Sample was thoroughly rinsed with distilled water and then totally immersed by distilled water. Filled sample was kept at ambient temperature 20 °C and relative humidity (40-80%) for 10 days. Off-odor and off-taste was evaluated with 5 panelists using control sample of distilled water.

	<u>Result</u>	<u>Limit</u>
Appearance	Clear, Colourless	Clear, Colourless
Odor	0	2.5
Taste	0	2.5

Assessment:

Intensity scale:

- 0 = No perceptible odour / taste
- 1 = Odour / taste just perceptible (but still difficult to define)
- 2 = Slight odour / taste
- 3 = Distinct odour / taste
- 4 = Strong odour / taste

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2) Overall Migration Test For Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and Amendment (EU) 2016/1416 of 24 August 2016 on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant:

Test no.	Time and Temperature
OM1	10 days at 20 °C

Fatty food simulant:

Test no.	Time and Temperature
OM1	10 days at 20 °C

II. Test Results

Tested Component	3% (w/v) acetic acid	Result in mg/dm ² 10% (v/v) ethanol	Fatty food simulant
(1)	<1.0	<1.0	5.3
(2)	<1.0	<1.0	<1.0
(4)	<1.0	<1.0	<1.0
(5)	<1.0	<1.0	2.4
(7)	2.3	<1.0	<1.0
Limit in	10	10	10

As per client's request, the above condition was used for the test.

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3) Specific Migration Of Metal For Plastic Food Contacting Materials/Articles

As per commission regulation (EU) NO. 10/ 2011 of 14 January 2011 and Amendment (EU) 2016/1416 of 24 August 2016 on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant: 3% (w/v) acetic acid

Time and Temperature

10 days at 20 °C

II. Test Results

Tested Component	Result in mg/kg								
	Barium	Cobalt	Copper	Iron	Lithium	Manganese	Zinc	Aluminum	Nickle
(1)	<0.1	<0.03	<1	<5	<0.1	<0.1	<1	<0.1	<0.01
(2)	<0.1	<0.03	<1	<5	<0.1	<0.1	<1	<0.1	<0.01
(4)	<0.1	<0.03	<1	<5	<0.1	<0.1	<1	<0.1	<0.01
(5)	<0.1	<0.03	<1	<5	<0.1	<0.1	<1	<0.1	<0.01
(7)	<0.1	<0.03	<1	<5	<0.1	<0.1	<1	<0.1	<0.01
Limit in	1	0.05	5	48	0.6	0.6	5	1	0.02

As per client's request, the above condition was used for the test.

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4) Specific Migration Of Primary Aromatic Amines Test For Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and Amendment (EU) 2016/1416 of 24 August 2016 on testing the migration of primary aromatic amines from polyamide kitchenware and of formaldehyde from melamine kitchenware

I. Test Condition:

Aqueous food simulant:

Time and Temperature
10 days at 20 °C

II. Test Results

Tested Component	Result in mg/kg 3% (w/v) acetic acid
(1)	ND
(2)	ND
(4)	ND
(5)	ND
(7)	ND
Limit in	Not detected

Remark: Detection limit = 0.01 mg/kg
ND= Not detected

As per client's request, the above condition and food simulant were used for the test.

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5) Specific Migration of Acrylonitrile For Plastic Food Contacting Materials/Articles

As per commission regulation (EU) NO. 10/ 2011 of 14 January 2011 and Amendment (EU) 2016/1416 of 24 August 2016 on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant:

Time and Temperature
10 days at 20 °C

II. Test Results

Tested Component	Result in mg/kg
(5)	3% (w/v) acetic acid ND
(7)	ND
Limit in	Not detected

Remark: Detection Limit = 0.01 mg/kg
ND= Not detected

As per client's request, the above condition and food simulant were used for the test.

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6) Specific Migration of Butadiene For Plastic Food Contacting Materials/Articles

As per commission regulation (EU) NO. 10/ 2011 of 14 January 2011 and Amendment (EU) 2016/1416 of 24 August 2016 on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant:

Time and Temperature
10 days at 20 °C

II. Test Results

Tested Component	Result in mg/kg
(5)	3% (w/v) acetic acid ND
(7)	ND
Limit in	Not detected

Remark: Detection Limit = 0.01 mg/kg
ND= Not detected

As per client's request, the above condition and food simulant were used for the test.

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7) Butadiene content For Plastic Food Contacting Materials/Articles

As per commission regulation (EU) NO. 10/ 2011 of 14 January 2011 and Amendment (EU) 2016/1416 of 24 August 2016 on plastic materials and articles intended to come into contact with food., by Headspace Gas-Chromatographic Mass Spectrometric (HS-GC/MS) analysis.

I. Test Results

Tested Component	Result in mg/kg
(5)	0.6
(7)	<0.1
Limit in	1(Max)

Remark: Detection Limit = 0.1 mg/kg

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- 8) Volatile Organic Matter Of Silicone Rubber & Peroxide Residues Of Silicone Rubber and Polystyrene & Styrene Copolymers

As per LFGB recommendation BII XV and V / VI.

I. Test Condition:

Aqueous food simulant:

Time and Temperature

24 hours at 90 °C

II. Test Results

Tested

Component

(5)

(7)

Result (% (w/w))

11.2

6.2

15 mg/dm² (max.)

Tested

Component

(5)

(7)

Result

No positive reaction

No positive reaction

Limit in

No positive reaction to peroxides

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9) Polycyclic aromatic hydrocarbons (PAHs) content

By solvent extraction and determined by Gas Chromatography - Mass Spectrometry Detector (GC-MSD).

I. Test Results

Tested Component	Result in mg/kg						Limit (mg/kg)
	(1)	(2)	(4)	(5)	(7)		
Naphthalene	ND	ND	ND	ND	ND	Not Detected	
Acenaphthylene	ND	ND	ND	ND	ND	Not Detected	
Acenaphthene	ND	ND	ND	ND	ND	Not Detected	
Fluorene	ND	ND	ND	ND	ND	Not Detected	
Phenanthrene	ND	ND	ND	ND	ND	Not Detected	
Anthracene	ND	ND	ND	ND	ND	Not Detected	
Fluoranthene	ND	ND	ND	ND	ND	Not Detected	
Pyrene	ND	ND	ND	ND	ND	Not Detected	
Chrysene	ND	ND	ND	ND	ND	Not Detected	
Benzo[a]anthracene	ND	ND	ND	ND	ND	Not Detected	
Benzo[b]fluoranthene	ND	ND	ND	ND	ND	Not Detected	
Benzo[k]fluoranthene	ND	ND	ND	ND	ND	Not Detected	
Benzo[a]pyrene	ND	ND	ND	ND	ND	Not Detected	
Dibenzo[a,h]anthracene	ND	ND	ND	ND	ND	Not Detected	
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND	Not Detected	
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND	Not Detected	
Benzo[j]fluoranthene	ND	ND	ND	ND	ND	Not Detected	
Benzo[e]pyrene	ND	ND	ND	ND	ND	Not Detected	
Sum of PAHs	ND	ND	ND	ND	ND	Not Detected	

Remark: ppm = Parts per million = mg/kg
 ND = Not Detected
 Detection Limit = 0.2 ppm

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10) Total Lead (Pb) And Cadmium (Cd) Content

By microwave digestion and followed by Inductively Coupled Plasma (ICP) Spectrophotometric analysis.

I. Test Results

Tested Component	Result in (ppm)					Limit (ppm)
	(1)	(2)	(4)	(5)	(7)	
Lead (Pb)	<10	<10	<10	<10	<10	100
Cadmium (Cd)	<10	<10	<10	<10	<10	100

Remark: ppm = parts per million = mg/kg

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11) Release Testing on Metals and Alloys Used in Food Contact Materials and Articles

With reference to EU Technical Guide "Council of Europe Resolution CM/Res(2013)9 on metals and alloys Used in Food Contact Materials and Articles". Migration test was carried out and heavy metal content was determined by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) and Inductively Coupled Plasma Mass Spectrometer (ICP-MS) with reference to ISO 11885: 2007 and ISO 17294-2:2003 respectively.

I. Test Condition:

Aqueous food simulant:

10 days at 20 °C

II. Test Results Food Simulant: Artificial tap water (Prepare according DIN 10531 Clause 4.2.2.2)

Tested Component	Result 1 st test (mg/kg)	Result 2 nd test (mg/kg)	Result 1 st test +Result 2 nd test (mg/kg)	7*Limit (mg/kg)	Result 3 rd test (mg/kg)	Limit (mg/kg)
	(3)	(3)	(3)		(3)	
Silver (Ag)	<0.05	<0.05	<0.05	0.56	<0.05	0.08
Aluminium (Al)	<1	<1	<1	35	<1	5
Chromium (Cr)	<0.02	<0.02	<0.02	1.75	<0.02	0.250
Cobalt (Co)	<0.01	<0.01	<0.01	0.14	<0.01	0.02
Copper (Cu)	<0.5	<0.5	<0.5	28	<0.5	4
Iron (Fe)	<1	<1	<1	280	<1	40
Manganese (Mn)	<0.1	<0.1	<0.1	12.6	<0.1	1.8
Molybdenum (Mo)	<0.02	<0.02	<0.02	0.84	<0.02	0.12
Nickel (Ni)	<0.1	<0.1	<0.1	0.98	<0.1	0.14
Tin (Sn)	<10	<10	<10	700	<10	100
Vanadium (V)	<0.005	<0.005	<0.005	0.07	<0.005	0.01
Zinc (Zn)	<1	<1	<1	35	<1	5
Antimony (Sb)	<0.01	<0.01	<0.01	0.28	<0.01	0.04
Arsenic (As)	<0.001	<0.001	<0.001	0.014	<0.001	0.002
Barium (Ba)	<0.1	<0.1	<0.1	8.4	<0.1	1.2
Beryllium (Be)	<0.01	<0.01	<0.01	0.07	<0.01	0.01
Cadmium (Cd)	<0.001	<0.001	<0.001	0.035	<0.001	0.005
Lead (Pb)	<0.005	<0.005	<0.005	0.070	<0.005	0.010
Lithium (Li)	<0.010	<0.010	<0.010	0.336	<0.010	0.048
Mercury (Hg)	<0.003	<0.003	<0.003	0.021	<0.003	0.003
Thallium (Tl)	<0.0001	<0.0001	<0.0001	0.0007	<0.0001	0.0001
Magnesium (Mg)	<0.1	<0.1	<0.1	-	<0.1	-
Titanium (Ti)	<0.1	<0.1	<0.1	-	<0.1	-

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Tested Component	Result 1 st test (mg/kg)	Result 2 nd test (mg/kg)	Result 1 st test + Result 2 nd test (mg/kg)	7*Limit (mg/kg)	Result 3 rd test (mg/kg)	Limit (mg/kg)
Silver (Ag)	<0.05	<0.05	<0.05	0.56	<0.05	0.08
Aluminium (Al)	<1	<1	<1	35	<1	5
Chromium (Cr)	<0.02	<0.02	<0.02	1.75	<0.02	0.250
Cobalt (Co)	<0.01	<0.01	<0.01	0.14	<0.01	0.02
Copper (Cu)	<0.5	<0.5	<0.5	28	<0.5	4
Iron (Fe)	1.8	3.0	4.8	280	6.0	40
Manganese (Mn)	<0.1	<0.1	<0.1	12.6	<0.1	1.8
Molybdenum (Mo)	<0.02	<0.02	<0.02	0.84	<0.02	0.12
Nickel (Ni)	<0.1	<0.1	<0.1	0.98	<0.1	0.14
Tin (Sn)	<10	<10	<10	700	<10	100
Vanadium (V)	<0.005	<0.005	<0.005	0.07	<0.005	0.01
Zinc (Zn)	<1	<1	<1	35	<1	5
Antimony (Sb)	<0.01	<0.01	<0.01	0.28	<0.01	0.04
Arsenic (As)	<0.001	<0.001	<0.001	0.014	<0.001	0.002
Barium (Ba)	<0.1	<0.1	<0.1	8.4	<0.1	1.2
Beryllium (Be)	<0.01	<0.01	<0.01	0.07	<0.01	0.01
Cadmium (Cd)	<0.001	<0.001	<0.001	0.035	<0.001	0.005
Lead (Pb)	<0.005	<0.005	<0.005	0.070	<0.005	0.010
Lithium (Li)	<0.010	<0.010	<0.010	0.336	<0.010	0.048
Mercury (Hg)	<0.003	<0.003	<0.003	0.021	<0.003	0.003
Thallium (Tl)	<0.0001	<0.0001	<0.0001	0.0007	<0.0001	0.0001
Magnesium (Mg)	<0.1	<0.1	<0.1	-	<0.1	-
Titanium (Ti)	<0.1	<0.1	<0.1	-	<0.1	-

Remark: The submitted sample/component is a repeated use article. The migration test was carried out three times on the same article. The sum of the results of the first and second tests should not exceed seven times the limit (Result 1st test + Result 2nd test < 7 * limit) and the Result 3rd test shouldn't exceed the limit.

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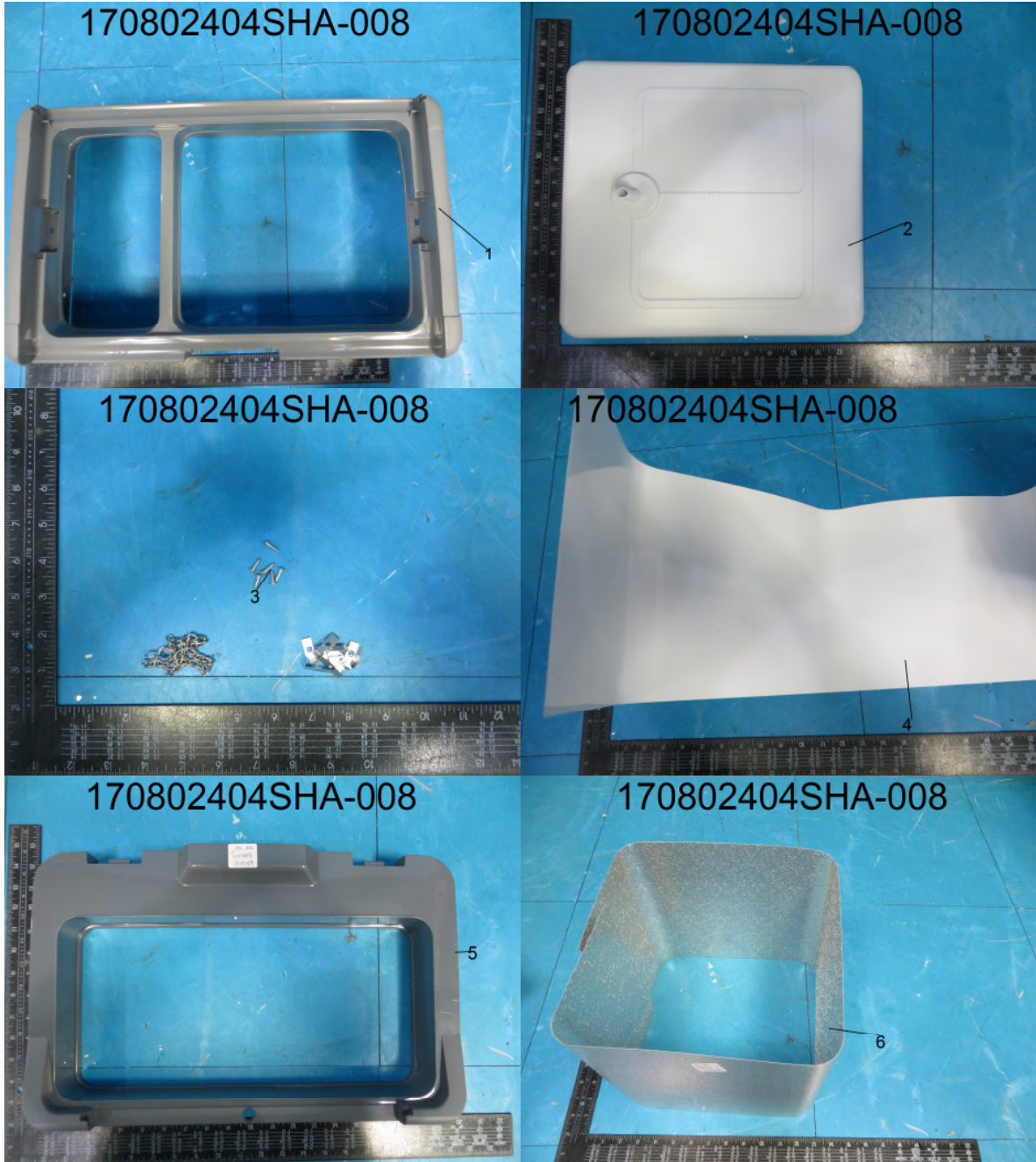
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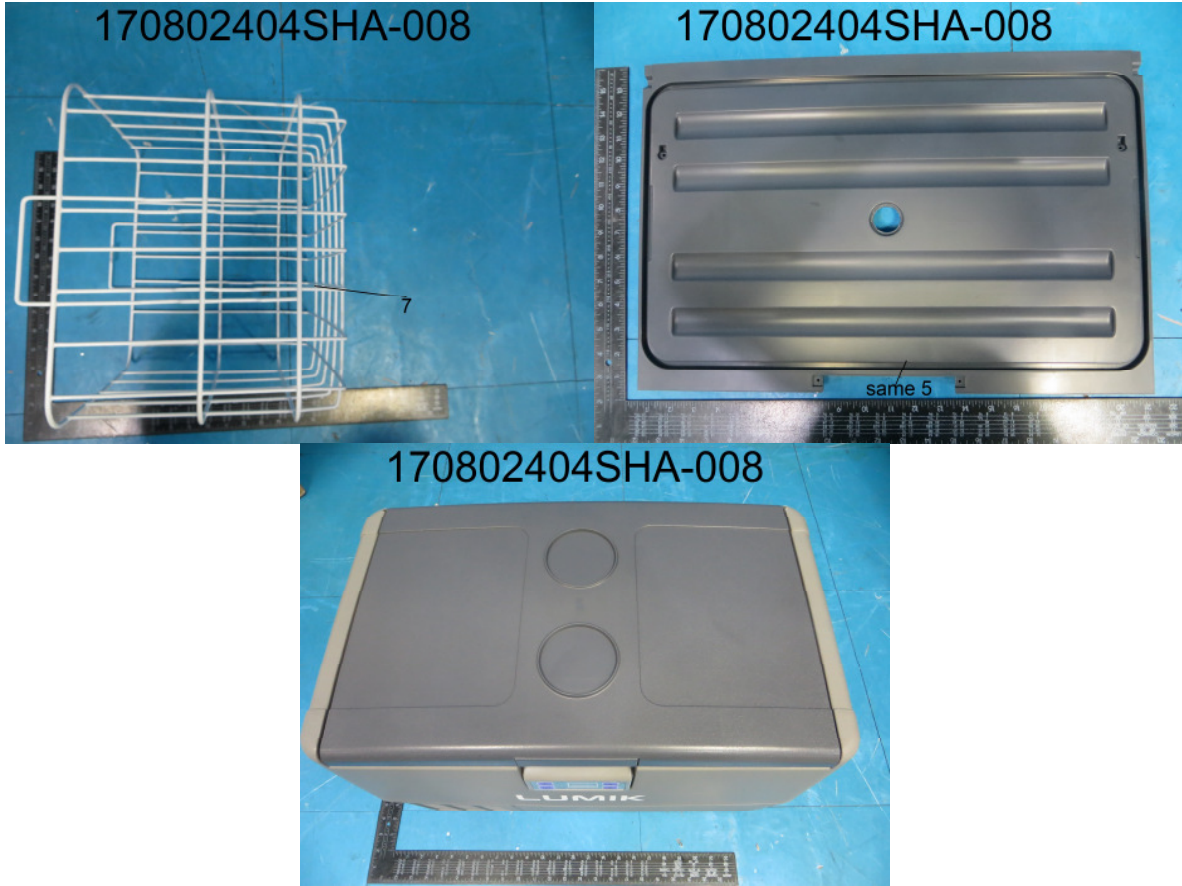
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Date sample received: Sep 04, 2017
Testing period: Sep 04, 2017 To Oct 16, 2017

End of Report

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