



Test Report

Number: 141200851SHA-005

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

Date: Feb 10, 2015

Sample Description:

Six(6) pieces of submitted samples said to be : (1)White PP;(2)Light gray PP(3)Metal with white plastic (4)Transparent AS
(5)Dark gray ABS(6)Stainless steel screw SUS 304

Item Name : Thermoelectric Cooler& Warmer
Item No. : YT-A-20X.YT-A-20XD.YT-A-15X.YT-A-15XD.YT-A-12X.YT-A-24X.
YT-A-26X.YT-A-32X.YT-A-45X

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

Berlin Duan
Manager



Intertek Testing Services Ltd., Shanghai

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Tests Requirement

The food contacting components of submitted sample need complied with the suggested food contacting testing parameters for German §30 and §31 LFGB and also complied with general requirement of regulation EC 1935/2004 article 3, paragraph1

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
- 3) Specific migration of heavy metal
- 4) Specific migration of Acrylonitrile
- 5) Volatile Organic Matter and Peroxide Residues of Styrene Copolymers
- 6) Determination of heavy metal release on metal part
- 7) Total polycyclic aromatic hydrocarbons
- 8) Total lead and cadmium content

To be continued

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Test Sequence

(1) Sensory Evaluation

With reference to §64 LFGB I00.90-6.

Test procedure:

Sample was thoroughly rinsed with distilled water and then filled with distilled water to capacity and 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.

Result :

Appearance : Clear, Colorless
Odor : No Perceptible Odor
Taste : No Perceptible Off-taste

Test Conclusion:

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

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

As per §64 LFGB B80.30-1, B80.30-2 and B80.30-3.

I. Condition of contact in actual use:

Temperature : ≤ 20 °C Time : ≤ 10 days

II. Test result:

Food simulant	Result (mg/dm ²)					Limit (mg/dm ²)
	(1)	(2)	(3)	(4)	(5)	
(A) 20%(v/v) ethanol	<1.0	1.4	<1.0	<1.0	<1.0	10

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

As per commission regulation (EU) NO.10/2011, selection of test condition & food simulants by 82/711/EEC,85/572/EEC and its amendment and EN13130-1.

I. Condition of contact in actual use:

Temperature : ≤ 20 °C Time : ≤ 10 days

II. Test result:

Food simulant	Element	Result (mg/kg)					Limit (mg/kg)
		(1)	(2)	(3)	(4)	(5)	
3% (w/v) acetic acid In aqueous solution	Barium	<0.1	<0.1	<0.1	<0.1	<0.1	1 (max.)
	Cobalt	<0.03	<0.03	<0.03	<0.03	<0.03	0.05 (max.)
	Copper	<1	<1	<1	<1	<1	5 (max.)
	Iron	<5	<5	<5	<5	<5	48 (max.)
	Lithium	<0.1	<0.1	<0.1	<0.1	<0.1	0.6 (max.)
	Manganese	<0.1	<0.1	<0.1	<0.1	<0.1	0.6 (max.)
	Zinc	<5	<5	<5	<5	<5	25 (max.)

To be continued

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(4) Specific Migration Test For Plastic Food Contacting Materials/Articles

As per commission regulation (EU) NO. 10/2011, selection of test condition & food simulants by 82/711/EEC, 85/572/EEC and its amendment and EN13130-13.

I. Condition of contact in actual use

Temperature : ≤ 20 °C Time : ≤ 10 days

II. Test results

For specific migration of Acrylonitrile

<u>Food simulant</u>	<u>Result (mg/kg)</u>		<u>Limit (mg/kg)</u>
	<u>(4)</u>	<u>(5)</u>	
3% (w/v) acetic acid	ND(<0.01)	ND(<0.01)	Not detected

Remark: Detection limit = 0.01 mg/kg

(5) Volatile Organic Matter of Styrene Copolymers

As per LFGB Recommendation VI.

<u>Tested component</u>	<u>Result (mg/dm²)</u>
<u>(4)</u>	<5
<u>(5)</u>	<5

Requirement: 15 mg/dm² (max.)

Peroxide Residues of Styrene Copolymers

As per LFGB recommendation VI.

<u>Tested component</u>	<u>Result</u>
<u>(4)</u>	No positive reaction
<u>(5)</u>	No positive reaction

Requirement: no positive reaction to peroxides

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(6) 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:

Temperature : ≤ 20 °C Time : ≤ 10 days

II. Test Result:

Food Simulant: Artificial tap water (prepare according DIN 10531 Clause 4.2.2.2)

Elements	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)
	(6)	(6)	(6)		(6)	
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	0.91	<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

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Food Simulant: Citric acid (5g/l)

Elements	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)	0.09	0.03	0.12	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)	1.39	<1	1.39	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	0.91	<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)	0.008	<0.001	0.008	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)	0.007	<0.001	0.007	0.035	<0.001	0.005
Lead (Pb)	0.013	<0.005	0.013	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

Remark: The submitted 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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(7) Polycyclic aromatic hydrocarbons (PAHs) content

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

Test results:

Compound	Result (ppm)				
	(1)	(2)	(3)	(4)	(5)
Naphthalene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND
Benzo[j]fluoranthene	ND	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND	ND
Sum of PAHs	ND	ND	ND	ND	ND

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

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

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

Tested elements	Result (ppm)					Requirement (ppm)
	(1)	(2)	(3)	(4)	(5)	
Lead (Pb)	<10	<10	<10	<10	<10	100
Cadmium (Cd)	<10	<10	<10	<10	<10	100

Remark: ppm = parts per million = mg/kg

To be continued





Date Sample Received : Dec 18 .2014
Testing Period : Dec 18 .2014 to Jan 30 .2015; Jan 30 .2015 to Feb 09 .2015

End of This Report

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