



# Test Report

No. SHAHG2000204401

Date: 16 Jan 2020

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## Test Results :

### Test Part Description :

Specimen No.	SGS Sample ID	Description	Material (claimed by the client)
SN1	SHA20-002044.001	Red TPE	TPE
SN2	SHA20-002044.002	Silvery stainless steel mesh	STAINLESS STEEL
SN3	SHA20-002044.003	Copper with ZN plating metal button	Copper with ZN plating

### Remarks :

- (1) mg/dm<sup>2</sup> = milligram per square decimeter
- (2) mg/kg = milligram per kilogram
- (3) °C = degree Celsius
- (4) < = less than
- (5) MDL = Method Detection Limit
- (6) ND = Not Detected ( < MDL )

Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments -Overall migration

Test Method : With reference to Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex III and Annex V for selection of condition and EN 1186-1:2002 for selection of test methods;  
 EN 1186-3: 2002 aqueous food simulants by total immersion method;  
 EN 1186-14: 2002 substitute test;

Simulant Used	Time	Temperature	Max. Permissible Limit	Result of 001	Conclusion
10% Ethanol (V/V) Aqueous Solution	2.0hr(s)	70°C	10mg/dm <sup>2</sup>	<3.0mg/dm <sup>2</sup>	PASS
3% Acetic acid (W/V) aqueous solution	2.0hr(s)	70°C	10mg/dm <sup>2</sup>	3.9mg/dm <sup>2</sup>	PASS
95% Ethanol	2.0hr(s)	60°C	10mg/dm <sup>2</sup>	7.0mg/dm <sup>2</sup> #	PASS
Isooctane	0.5hr(s)	40°C	10mg/dm <sup>2</sup>	7.8mg/dm <sup>2</sup> #	PASS

### Notes :

- (1) Analytical tolerance of aqueous simulants is 2 mg/dm<sup>2</sup> or 12 mg/kg.
- (2) Analytical tolerance of fatty food simulants is 3 mg/dm<sup>2</sup> or 20mg/kg.
- (3) Test condition & simulant were specified by client.
- (4) The test data is obtained by considering the articles intended for repeated use as per described in Commission Regulation (EU) No 10/2011 of 14 January 2011 Annex V. Report the 3rd extractive result.

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Commission Regulation (EU) No 10/2011 of 14 January 2011 with amendments -Specific migration of heavy metal

Test Method : With reference to EN13130-1:2004, analysis was performed by ICP-OES.

Sample 001

Simulant Used : 3% Acetic acid (W/V) aqueous solution

Test Condition : 40 °C 0.5 hr(s)

Test Item(s)	Max. Permissible Limit	Unit	MDL	Test Result
Migration times	-	-	-	Third
Area/volume	-	dm <sup>2</sup> /kg	-	6.0
Aluminium(Al)	1	mg/kg	0.1	ND
Barium(Ba)	1	mg/kg	0.25	ND
Cobalt(Co)	0.05	mg/kg	0.01	ND
Copper(Cu)	5	mg/kg	0.25	ND
Iron(Fe)	48	mg/kg	0.25	ND
Lithium(Li)	0.6	mg/kg	0.5	ND
Manganese(Mn)	0.6	mg/kg	0.25	ND
Zinc(Zn)	5	mg/kg	0.5	ND
Nickel(Ni)	0.02	mg/kg	0.02	ND
Conclusion				PASS

Notes :

(1) Test condition & simulant were specified by client.

Verification for label claim validity – Bisphenol A free by Total Content of Bisphenol A

Test Method : With reference to Part II Section D2 of Testing Methods for Foodstuffs, Implements, Containers and Packaging, Toys, Detergents, JETRO, Japan External Trade Organization, 2009 (Dichloromethane extraction by ultrasonic bath). Analysis was performed by HPLC-MS.

Test Item(s)	Limit	Unit	MDL	001
Bisphenol-A	0.1	mg/kg	0.1	ND
Conclusion				PASS

Europe Resolution CM/Res(2013)9-Extractable heavy metals



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Test Method : With reference to EN 13130-1:2004, analysis was performed by ICP-OES and ICP-MS.

Sample 002: PASS

Simulant Used : Artificial tap water

Test Condition : 40 °C 0.5 hr(s)

Area/Volume : 6.0 dm<sup>2</sup>/kg

Test Item(s)	Limit	Unit	MDL	1st + 2nd Migration
Aluminium(Al)	35	mg/kg	0.2	ND
Antimony(Sb)	0.28	mg/kg	0.02	ND
Chromium(Cr)	1.75	mg/kg	0.1	ND
Cobalt(Co)	0.14	mg/kg	0.01	ND
Copper(Cu)	28	mg/kg	0.1	ND
Iron(Fe)	280	mg/kg	0.25	ND
Manganese(Mn)	12.6	mg/kg	0.25	ND
Molybdenum(Mo)	0.84	mg/kg	0.02	0.02
Nickel(Ni)	0.98	mg/kg	0.05	ND
Silver(Ag)	0.56	mg/kg	0.03	ND
Tin (Sn)	700	mg/kg	5	ND
Vanadium(V)	0.07	mg/kg	0.005	ND
Zinc(Zn)	35	mg/kg	1	ND
Arsenic(As)	0.014	mg/kg	0.001	ND
Barium(Ba)	8.4	mg/kg	0.25	ND
Beryllium(Be)	0.07	mg/kg	0.005	ND
Cadmium(Cd)	0.035	mg/kg	0.002	ND
Lead(Pb)	0.07	mg/kg	0.005	ND
Lithium(Li)	0.336	mg/kg	0.02	ND
Mercury(Hg)	0.021	mg/kg	0.002	ND
Thallium(Tl)	0.0007	mg/kg	0.0001	ND
Magnesium(Mg)	-	mg/kg	5	ND
Titanium(Ti)	-	mg/kg	0.05	ND
Test Item(s)	Limit	Unit	MDL	3rd Migration
Aluminium(Al)	5	mg/kg	0.2	ND
Antimony(Sb)	0.04	mg/kg	0.02	ND
Chromium(Cr)	0.25	mg/kg	0.1	ND
Cobalt(Co)	0.02	mg/kg	0.01	ND
Copper(Cu)	4	mg/kg	0.1	ND
Iron(Fe)	40	mg/kg	0.25	ND
Manganese(Mn)	1.8	mg/kg	0.25	ND
Molybdenum(Mo)	0.12	mg/kg	0.02	ND
Nickel(Ni)	0.14	mg/kg	0.05	ND
Silver(Ag)	0.08	mg/kg	0.03	ND

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Test Item(s)	Limit	Unit	MDL	3rd Migration
Tin (Sn)	100	mg/kg	5	ND
Vanadium(V)	0.01	mg/kg	0.005	ND
Zinc(Zn)	5	mg/kg	1	ND
Arsenic(As)	0.002	mg/kg	0.001	ND
Barium(Ba)	1.2	mg/kg	0.25	ND
Beryllium(Be)	0.01	mg/kg	0.005	ND
Cadmium(Cd)	0.005	mg/kg	0.002	ND
Lead(Pb)	0.01	mg/kg	0.005	ND
Lithium(Li)	0.048	mg/kg	0.02	ND
Mercury(Hg)	0.003	mg/kg	0.002	ND
Thallium(Tl)	0.0001	mg/kg	0.0001	ND
Magnesium(Mg)	-	mg/kg	5	ND
Titanium(Ti)	-	mg/kg	0.05	ND

Sample 003: **PASS**

Simulant Used : Artificial tap water

Test Condition : 40 °C 0.5 hr(s)

Area/Volume : 6.0 dm<sup>2</sup>/kg

Test Item(s)	Limit	Unit	MDL	1st + 2nd Migration
Aluminium(Al)	35	mg/kg	0.2	ND
Antimony(Sb)	0.28	mg/kg	0.02	ND
Chromium(Cr)	1.75	mg/kg	0.1	ND
Cobalt(Co)	0.14	mg/kg	0.01	ND
Copper(Cu)	28	mg/kg	0.1	ND
Iron(Fe)	280	mg/kg	0.25	ND
Manganese(Mn)	12.6	mg/kg	0.25	ND
Molybdenum(Mo)	0.84	mg/kg	0.02	ND
Nickel(Ni)	0.98	mg/kg	0.05	ND
Silver(Ag)	0.56	mg/kg	0.03	ND
Tin (Sn)	700	mg/kg	5	ND
Vanadium(V)	0.07	mg/kg	0.005	ND
Zinc(Zn)	35	mg/kg	1	ND
Arsenic(As)	0.014	mg/kg	0.001	ND
Barium(Ba)	8.4	mg/kg	0.25	ND
Beryllium(Be)	0.07	mg/kg	0.005	ND
Cadmium(Cd)	0.035	mg/kg	0.002	ND
Lead(Pb)	0.07	mg/kg	0.005	ND
Lithium(Li)	0.336	mg/kg	0.02	ND
Mercury(Hg)	0.021	mg/kg	0.002	ND
Thallium(Tl)	0.0007	mg/kg	0.0001	ND
Magnesium(Mg)	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	1st + 2nd Migration
Titanium(Ti)	-	mg/kg	0.05	ND
Test Item(s)	Limit	Unit	MDL	3rd Migration
Aluminium(Al)	5	mg/kg	0.2	ND
Antimony(Sb)	0.04	mg/kg	0.02	ND
Chromium(Cr)	0.25	mg/kg	0.1	ND
Cobalt(Co)	0.02	mg/kg	0.01	ND
Copper(Cu)	4	mg/kg	0.1	ND
Iron(Fe)	40	mg/kg	0.25	ND
Manganese(Mn)	1.8	mg/kg	0.25	ND
Molybdenum(Mo)	0.12	mg/kg	0.02	ND
Nickel(Ni)	0.14	mg/kg	0.05	ND
Silver(Ag)	0.08	mg/kg	0.03	ND
Tin (Sn)	100	mg/kg	5	ND
Vanadium(V)	0.01	mg/kg	0.005	ND
Zinc(Zn)	5	mg/kg	1	ND
Arsenic(As)	0.002	mg/kg	0.001	ND
Barium(Ba)	1.2	mg/kg	0.25	ND
Beryllium(Be)	0.01	mg/kg	0.005	ND
Cadmium(Cd)	0.005	mg/kg	0.002	ND
Lead(Pb)	0.01	mg/kg	0.005	ND
Lithium(Li)	0.048	mg/kg	0.02	ND
Mercury(Hg)	0.003	mg/kg	0.002	ND
Thallium(Tl)	0.0001	mg/kg	0.0001	ND
Magnesium(Mg)	-	mg/kg	5	ND
Titanium(Ti)	-	mg/kg	0.05	ND

### Notes :

- (1) Test condition & simulant were specified by client.
- (2) Requirement for repeat use article: According to Council of Europe Resolution CM/Res(2013)9, the result from 3rd migration shall comply with the Specific Release Limit (SRL) and the sum of 1st and 2nd migration shall not exceed seven times of SRL for repeated use articles
- (3) Acidic foodstuff is not considered for compliance

### Remark:

# = Exceed the limit



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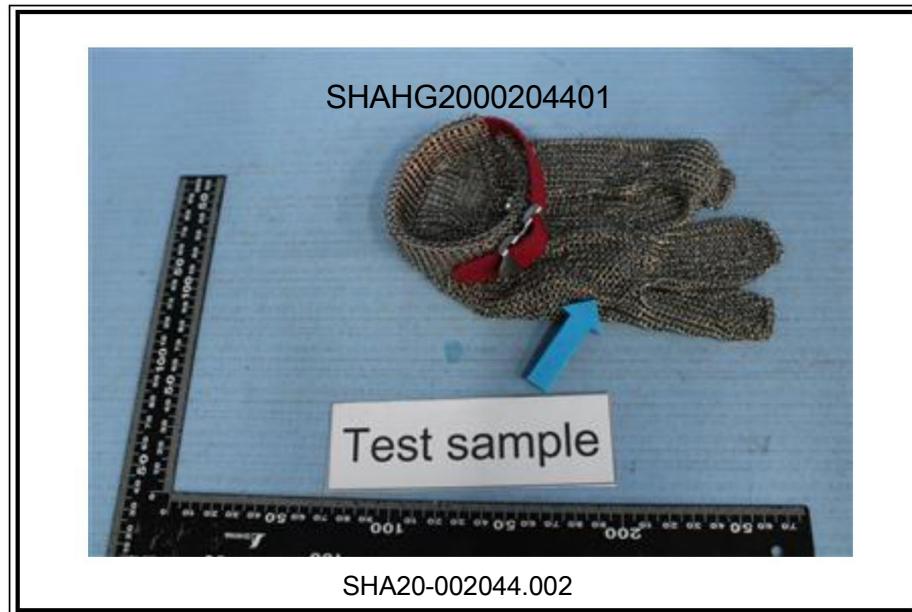
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