

Technical Report No. 68.401.18.2968.01A
Dated 2018-10-31

Client: New Nanfang Electrical Appliance Co., Ltd

Address: Chikan District, Zhanjiang, China

Attn.: Ms. Wan

Sample Description: Rice cooker & slow cooker

Model No.: NSCDA-450, RC-15

Ref. Model No.: RCX-XXXX, MRCX-XXXX, NSC-XXXX, NSCDX-XXX, DRC-XXXX, NSC-3X150R, NSC-3X25, NSC-2X15, NSC-2X25, NSC-3X150 (The "X" can be numerical, letter or blank)

Sample Received Date: 2018-10-16

Test Period: From 2018-10-16 to 2018-10-29

Location of Testing: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch

Purpose of examination: As specified by client, to test as regulated by the German Food & Feed Acts LFGB (§ 30 & 31) and Regulation (EC) No.1935/2004

Test Result: Refer to following page(s)

Remark: The result relates only to the items tested.

TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
TÜV SÜD Group

Prepared by:



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Project Handler



Reviewed by:



Scarlett Liang
Designated Reviewer

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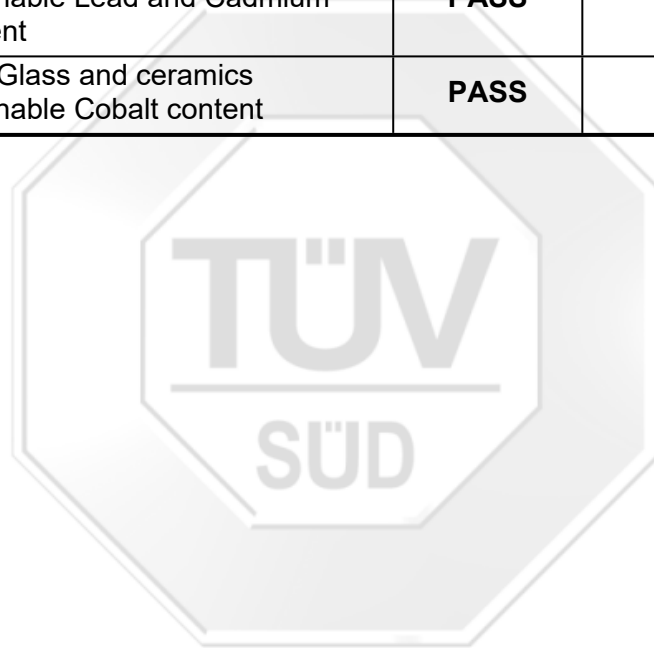
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SUMMARY OF TEST RESULTS

No.	Test Requested	Conclusion	Remarks
1.	For material: Plastics or coating – Overall migration test for compliance with regulation (EU) 10/2011 and it's amendment (EU) 2016/1416	PASS	
2.	For material: Plastics or coating – Specific Migration of Heavy Metals (Ba, Co, Cu, Fe, Li, Mn, Zn, Al, Ni) for compliance with regulation (EU) 10/2011 and it's amendments regulation (EU) 2016/1416, (EU) 2017/752	PASS	
3.	For material: Plastics or coating – Specific Migration of Primary Aromatic Amine for compliance with regulation (EU) 10/2011.	PASS	
4.	For material: Silicone – Extractable components	PASS	
5.	For material: Silicone / Rubber / Plastic – Remaining Peroxide	PASS	
6.	For material: Silicone / Rubber – Volatile Organic Matters	PASS	
7.	For material: Silicone – Total Platinum content	PASS	
8.	For material: Polycarbonates (PC)/Non-stick coating – Specific Migration of Bisphenol A for compliance with regulation (EU) No. 10/2011 and it's amendment (EU) No. 2018/213	PASS	
9.	For material: Polypropylene (PP) – Total Chromium, Vanadium, Zirconium and Hafnium content	PASS	
10.	For material: Non-stick coating – Specific Migration of Phenolic substances	PASS	
11.	For material: Non-stick coating – Specific Migration of Formaldehyde	PASS	

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No.	Test Requested	Conclusion	Remarks
12.	For material: Non-stick coating – Specific Migration of PFOA and PFOS	PASS	
13.	For material: Metal and Metal alloy – Specific Migration of 21 Heavy Metals according to European Directorate for the Quality of Medicines & Healthcare Technical guide PA/PH/EMB (13) 9 and Resolution CM/Res(2013)9	PASS	
14.	For material: Glass and ceramics – Leachable Lead and Cadmium content	PASS	
15.	For material: Glass and ceramics – Leachable Cobalt content	PASS	



1. TESTED SUBJECT DESCRIPTION

Sample Number	Item Name	Tested Material Description	Photo
001	PP	White plastic	  
002	PP	Transparent plastic	 


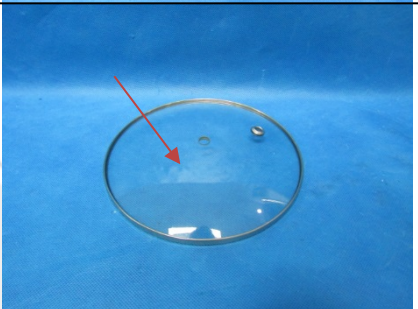
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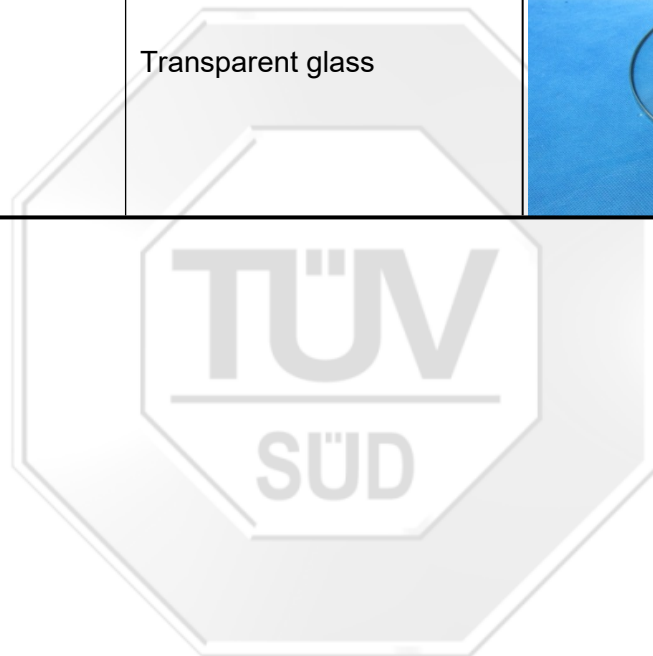
Sample Number	Item Name	Tested Material Description	Photo
003	Coating	Black Non-stick coating	
004	Silicone	Black silicone	 
005	Silicone	Transparent silicone	 

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Sample Number	Item Name	Tested Material Description	Photo
006	Stainless steel	Silvery metal	
007	Stainless steel	Silvery metal	
008	Aluminium alloy	Silvery metal	
009	Ceramic	White ceramic	

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Sample Number	Item Name	Tested Material Description	Photo
010	Ceramic	Black ceramic	
011	Glass	Transparent glass	



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2. TEST RESULT

2.1. OVERALL MIGRATION TEST FOR PLASTIC

Test method: As specified in Regulation (EU) No. 10/2011; with reference to EN 1186:part 1, part 2, part 3, part 8, part 9 & part 14 :2002.

Simulant Used	Test Condition	Result [mg/dm ²]			Maximum Permissible Limit [mg/dm ²]
		Sample 001	Sample 002	Sample 003	
3% Acetic Acid	100 °C for 2 hours	< 3.0	< 3.0	< 3.0	10
10% Ethanol	100 °C for 2 hours	< 3.0	< 3.0	< 3.0	10
Rectified Olive Oil	100 °C for 2 hours	< 3.0	< 3.0	< 3.0	10

Note:

- “°C” denotes degree Celsius
- “mg/dm²” denotes milligram per square decimeter
- “<” denotes less than
- The specification was quoted from regulation (EU) 10/2011.

2.2. SPECIFIC MIGRATION OF HEAVY METALS (Ba, Co, Cu, Fe, Li, Mn, Zn, Al, Ni) TEST

Test method: As specified in Regulation (EU) No. 10/2011, the sample(s) were migrated with food simulant, followed by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) analysis.

Testing condition and simulant: 3% acetic acid at 100 °C for 2 hour(s).

Test Item	Result [mg/kg]			Maximum Permissible Limit [mg/kg]
	Sample 001	Sample 002	Sample 003	
Barium (Ba)	<0.10	<0.10	<0.10	1
Cobalt (Co)	<0.05	<0.05	<0.05	0.05
Copper (Cu)	<0.50	<0.50	<0.50	5
Iron (Fe)	<1.00	<1.00	<1.00	48
Lithium (Li)	<0.10	<0.10	<0.10	0.6
Manganese (Mn)	<0.05	<0.05	<0.05	0.6
Zinc (Zn)	<1.00	<1.00	<1.00	5
Aluminium (Al)	<0.05	<0.05	<0.05	1
Nickel (Ni)	<0.02	<0.02	<0.02	0.02

Note:

- “°C” denotes degree Celsius
- “mg/kg” denotes milligram per kilogram foodstuff
- “<” denotes less than
- The specification was quoted from regulation (EU) 10/2011 and it's amendments regulation (EU) 2016/1416, (EU) 2017/752.

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2.3. SPECIFIC MIGRATION OF PRIMARY AROMATIC AMINE TEST

Test method: With reference to EN 1186-1: 2002, followed by Kunststoffe im Lebensmittelverkehr, Book 2, Teil B II, XXI. [Detection limit: 0.01 mg/kg]

Testing condition and simulant: 3% acetic acid at 100 °C for 2 hour(s).

Test Item	Result [mg/kg]	Maximum Permissible Limit [mg/kg]
	Sample 003	
Migration of Primary Aromatic Amine	< 0.01	Not Detected (< 0.01 mg/kg)

Note:

- “°C” denotes degree Celsius
- “mg/kg” denotes milligram per kilogram foodstuff
- “<” denotes less than
- The specification was quoted from regulation (EU) 10/2011.

2.4. EXTRACTABLE COMPONENTS TEST

Test method: With reference to Kunststoffe im Lebensmittelverkehr, Book 2, Teil B II, XV.

Simulant Used	Test Condition	Result [%]		Maximum Permissible Limit [%]
		Sample 004	Sample 005	
Distilled water	Reflux for 5 hours	< 0.10	< 0.10	0.5
3% Acetic Acid	Reflux for 5 hours	< 0.10	< 0.10	0.5
10% Ethanol	Reflux for 5 hours	< 0.10	< 0.10	0.5

Note :

- “%” denotes percentage by weight
- “<” denotes less than
- The specification was quoted from Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr” Part XV “Silicone”

2.5. REMAINING PEROXIDE TEST

Test method : With reference to 58th Communication on the testing of plastics, Bundesgesundheitsbl. 40 (1997) 412.

Test Item	Result		Maximum Permissible Limit
	Sample 004	Sample 005	
Remaining Peroxide	Absent	Absent	Absent

Note:

- The specification was quoted from Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr Part XV and Part VI.

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2.6. VOLATILE ORGANIC MATTER TEST

Test Method: With reference to 61st Communication on testing of plastics in Bundesgesundheitsbl 46 (2003) 362.

Test Item	Test Condition	Result [%]		Maximum Permissible Limit [%]
		Sample 004	Sample 005	
Volatile Organic Matter	200 °C for 4 hours	0.28	0.35	0.5

Note:

- “°C” denotes degree Celsius
- “%” denotes percentage by weight
- “<” denotes less than
- The specification was quoted from Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr Part XV “Silicones”

2.7. TOTAL PLATINUM CONTENT TEST

Test method: Microwave digestion, followed by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) analysis.

Test Item	Result [mg/kg]		Maximum Permissible Limit [mg/kg]
	Sample 004	Sample 005	
Total Platinum (Pt)	< 20.0	< 20.0	50 (other than coating paper, plastic film)

Note:

- “mg/kg” denotes milligram per kilogram
- “<” denotes less than
- The specification was quoted from Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr Part XV “Silicone”

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2.8. SPECIFIC MIGRATION OF BISPHENOL A TEST

Test method: As specified in Regulation (EU) No. 10/2011, the sample(s) were migrated with food simulant, followed by Liquid Chromatography with Tandem Mass Spectrometry Detection (LC-MS/MS) analysis.

Testing condition and simulant: 95% ethanol at 60 °C for 3.5 hour(s).

Test Item	Result [mg/kg]	Maximum Permissible Limit [mg/kg]
	Sample 003	
Migration of Bisphenol A	< 0.02	0.05

Note:

- “°C” denotes degree Celsius
- “mg/kg” denotes milligram per kilogram foodstuff
- “<” denotes less than
- The specification was quoted from regulation (EU) 10/2011 and it's amendment (EU) No. 2018/213.

2.9. TOTAL CHROMIUM, VANADIUM, ZIRCONIUM AND HAFNIUM CONTENT TEST

Test method: Microwave digestion, followed by Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) analysis.

Test Item	Result [mg/kg]		Maximum Permissible Limit [mg/kg]
	Sample 001	Sample 002	
Chromium (Cr)	< 10	< 10	10
Vanadium (V)	< 15	< 15	20
Zirconium (Zr)	< 15	< 15	100
Hafnium (Hf)	< 15	< 15	100

Note:

- “mg/kg” denotes milligram per kilogram
- “<” denotes less than
- The specification was quoted from Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr” Part VII “Polypropylene”.

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2.10. SPECIFIC MIGRATION OF PHENOLIC SUBSTANCES TEST

Test method: With reference to DIN 53704:1988, the sample(s) were migrated with food stimulant, followed by Ultraviolet–visible Specphotometer (UV-Vis) analysis.

Testing condition and simulant: 3% acetic acid at 100 °C for 2 hour(s).

Test Item	Result [mg/dm ²]	Maximum Permissible Limit [mg/dm ²]
	Sample 003	
Migration of Phenolic Substances	< 0.05	0.05

Note:

- “mg/dm²” denotes milligram per square decimeter
- “<” denotes less than
- The specification was quoted from the Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr” Part LI “Temperature Resistant Polymer Coating Systems for Frying, Cooking and Baking Utensils”

2.11. SPECIFIC MIGRATION OF FORMALDEHYDE TEST

Test method: The sample(s) were migrated with food stimulant, followed by Ultraviolet–visible Specphotometer (UV-Vis) analysis.

Testing condition and simulant: 3% acetic acid at 100 °C for 2 hour(s).

Test Item	Result [mg/kg]	Maximum Permissible Limit [mg/kg]
	Sample 003	
Migration of Formaldehyde	< 1	15

Note:

- “°C” denotes degree Celsius
- “mg/kg” denotes milligram per kilogram foodstuff
- “<” denotes less than
- The specification was quoted from the Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr” Part LI “Temperature Resistant Polymer Coating Systems for Frying, Cooking and Baking Utensils”

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2.12. SPECIFIC MIGRATION OF PFOA AND PFOS TEST

Test method: The samples were tested migrated with food simulant, followed by Liquid Chromatography/Mass Spectrometry (LC-MS) analysis.

Testing condition and simulant: 95% ethanol at 60 °C for 3.5 hour(s).

Test Item	Result [mg/dm ²]	Maximum Permissible Limit [mg/dm ²]
	Sample 003	
Migration of PFOA and PFOS	< 0.002	0.005

Note:

- “°C” denotes degree Celsius
- “mg/dm²” denotes milligram per square decimeter
- “<” denotes less than
- The specification was quoted from the Recommendation of the BfR “Kunststoffe im Lebensmittelverkehr” Part LI “Temperature Resistant Polymer Coating Systems for Frying, Cooking and Baking Utensils”



2.13. SPECIFIC MIGRATION OF HEAVY METAL CONTENT TEST

Test method: The sample(s) were extracted with food simulant, followed by analysis using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

Testing condition and simulant: 0.5% citric acid at 100 °C for 2 hour(s).

No.	Test Item		Result [mg/kg] (3 rd migration)			Limit for 3 rd migration [mg/kg]
			Sample 003	Sample 006	Sample 007	
1.	Barium	(Ba)	<0.1	<0.1	<0.1	1.2
2.	Copper	(Cu)	<0.1	<0.1	<0.1	4
3.	Iron	(Fe)	<0.1	0.2	0.2	40
4.	Tin	(Sn)	<0.5	<0.5	<0.5	100
5.	Chromium	(Cr)	<0.05	<0.05	<0.05	0.250
6.	Manganese	(Mn)	<0.1	<0.1	<0.1	1.8
7.	Zinc	(Zn)	< 0.1	< 0.1	< 0.1	5
8.	Aluminum	(Al)	<0.1	<0.1	<0.1	5
9.	Lithium	(Li)	<0.005	<0.005	<0.005	0.048
10.	Beryllium	(Be)	<0.002	<0.002	<0.002	0.01
11.	Vanadium	(V)	< 0.002	< 0.002	< 0.002	0.01
12.	Nickel	(Ni)	<0.05	<0.05	<0.05	0.14
13.	Cobalt	(Co)	<0.002	<0.002	<0.002	0.02
14.	Arsenic	(As)	<0.0004	<0.0004	<0.0004	0.002
15.	Molybdenum	(Mo)	<0.002	<0.002	<0.002	0.12
16.	Silver	(Ag)	<0.002	<0.002	<0.002	0.08
17.	Cadmium	(Cd)	<0.0004	<0.0004	<0.0004	0.005
18.	Antimony	(Sb)	<0.005	<0.005	<0.005	0.04
19.	Mercury	(Hg)	< 0.0005	< 0.0005	< 0.0005	0.003
20.	Thallium	(Tl)	< 0.0001	< 0.0001	< 0.0001	0.0001
21.	Lead	(Pb)	< 0.01	< 0.01	< 0.01	0.010

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Testing condition and simulant: artificial tap water at 100 °C for 2 hour(s).

No.	Test Item		Result [mg/kg] (3 rd migration)	Limit for 3 rd migration [mg/kg]
			Sample 008	
1.	Barium	(Ba)	<0.1	1.2
2.	Copper	(Cu)	<0.1	4
3.	Iron	(Fe)	<0.1	40
4.	Tin	(Sn)	<0.5	100
5.	Chromium	(Cr)	<0.05	0.250
6.	Manganese	(Mn)	<0.1	1.8
7.	Zinc	(Zn)	< 0.1	5
8.	Aluminum	(Al)	1.4	5
9.	Lithium	(Li)	<0.005	0.048
10.	Beryllium	(Be)	<0.002	0.01
11.	Vanadium	(V)	< 0.002	0.01
12.	Nickel	(Ni)	<0.05	0.14
13.	Cobalt	(Co)	<0.002	0.02
14.	Arsenic	(As)	<0.0004	0.002
15.	Molybdenum	(Mo)	<0.002	0.12
16.	Silver	(Ag)	<0.002	0.08
17.	Cadmium	(Cd)	<0.0004	0.005
18.	Antimony	(Sb)	<0.005	0.04
19.	Mercury	(Hg)	< 0.0005	0.003
20.	Thallium	(Tl)	< 0.0001	0.0001
21.	Lead	(Pb)	< 0.01	0.010

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Testing condition and simulant: 0.5% citric acid at 100 °C for 2 hour(s).

No.	Test Item		Result [mg/kg] (1 st + 2 nd Migration)			Limit for 1 st +2 nd migration [mg/kg]
			Sample 003	Sample 006	Sample 007	
1.	Barium	(Ba)	<0.2	<0.2	<0.2	8.4
2.	Copper	(Cu)	<0.2	<0.2	<0.2	28
3.	Iron	(Fe)	<0.2	3.2	2.3	280
4.	Tin	(Sn)	<1.0	<1.0	<1.0	700
5.	Chromium	(Cr)	<0.1	0.220	0.143	1.75
6.	Manganese	(Mn)	<0.2	<0.2	<0.2	12.6
7.	Zinc	(Zn)	< 0.2	< 0.2	< 0.2	35
8.	Aluminum	(Al)	<0.2	<0.2	<0.2	35
9.	Lithium	(Li)	<0.01	<0.01	<0.01	0.336
10.	Beryllium	(Be)	< 0.004	< 0.004	< 0.004	0.07
11.	Vanadium	(V)	< 0.004	< 0.004	< 0.004	0.07
12.	Nickel	(Ni)	<0.1	0.13	<0.1	0.98
13.	Cobalt	(Co)	<0.004	0.005	<0.004	0.14
14.	Arsenic	(As)	<0.0008	<0.0008	<0.0008	0.014
15.	Molybdenum	(Mo)	<0.004	<0.004	<0.004	0.84
16.	Silver	(Ag)	<0.004	<0.004	<0.004	0.56
17.	Cadmium	(Cd)	<0.0008	<0.0008	<0.0008	0.035
18.	Antimony	(Sb)	<0.01	<0.01	<0.01	0.28
19.	Mercury	(Hg)	< 0.001	< 0.001	< 0.001	0.021
20.	Thallium	(Tl)	< 0.0002	< 0.0002	< 0.0002	0.0007
21.	Lead	(Pb)	< 0.02	< 0.02	< 0.02	0.07

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Testing condition and simulant: artificial tap water at 100 °C for 2 hour(s).

No.	Test Item		Result [mg/kg] (1 st + 2 nd Migration)	Limit for 1 st +2 nd migration [mg/kg]
			Sample 008	
1.	Barium	(Ba)	<0.2	8.4
2.	Copper	(Cu)	<0.2	28
3.	Iron	(Fe)	<0.2	280
4.	Tin	(Sn)	<1.0	700
5.	Chromium	(Cr)	<0.1	1.75
6.	Manganese	(Mn)	<0.2	12.6
7.	Zinc	(Zn)	< 0.2	35
8.	Aluminum	(Al)	1.6	35
9.	Lithium	(Li)	<0.01	0.336
10.	Beryllium	(Be)	< 0.004	0.07
11.	Vanadium	(V)	< 0.004	0.07
12.	Nickel	(Ni)	<0.1	0.98
13.	Cobalt	(Co)	<0.004	0.14
14.	Arsenic	(As)	<0.0008	0.014
15.	Molybdenum	(Mo)	<0.004	0.84
16.	Silver	(Ag)	<0.004	0.56
17.	Cadmium	(Cd)	<0.0008	0.035
18.	Antimony	(Sb)	<0.01	0.28
19.	Mercury	(Hg)	< 0.001	0.021
20.	Thallium	(Tl)	< 0.0002	0.0007
21.	Lead	(Pb)	< 0.02	0.07

Note:

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2.14. LEACHABLE LEAD AND CADMIUM CONTENT TEST

Test method: With reference to BS EN 1388: Part 1: 1996 and BS EN 1388: Part 2: 1996.

Test Item	Unit	Result		Maximum Permissible Limit
		Sample 009	Sample 010	
Leachable Lead	mg/L	< 0.10	< 0.10	4.0
Leachable Cadmium	mg/L	< 0.05	< 0.05	0.3

Note:

- “mg/L” denotes milligram per Litre
- “<” denotes less than
- The specification was quoted from directive 84/500/EEC for article as hollowware (category 2).

Test Item	Unit	Result	Maximum Permissible Limit
		Sample 011	
Leachable Lead	mg/dm ²	< 0.10	0.8
Leachable Cadmium	mg/dm ²	< 0.02	0.07

Note:

- “mg/dm²” denotes milligram per square decimeter
- “<” denotes less than
- The specification was quoted from directive 84/500/EEC for article as flatware (category 1).

2.15. LEACHABLE COBALT CONTENT TEST

Test method: With reference to BS EN 1388: Part 1: 1996 and BS EN 1388: Part 2: 1996.

Test Item	Unit	Result			Maximum Permissible Limit
		Sample 009	Sample 010	Sample 011	
Leachable Cobalt	mg/L	<0.05	<0.05	<0.05	0.1

Note:

- “mg/L” denotes milligram per Litre
- “<” denotes less than
- The specification was quoted from Germany Bavarian State Ministry of Justice and Consumer Protection.

APPENDIX:

Photos of submitted products

