



# Test Report

Report No : TST20230540122-6EN

Date:Jun.01.2023

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**Applicant:** Yangjiang YF Hardware Co.,Ltd  
**Address:** No. 3, Jinlong Road, Jinjiao District, Jiangcheng District, Yangjiang City, Guangdong Province, China  
**Manufacturer:** Yangjiang YF Hardware Co.,Ltd  
**Address:** No. 3, Jinlong Road, Jinjiao District, Jiangcheng District, Yangjiang City, Guangdong Province, China

The following sample(s) was /were submitted and identified on behalf of the clients as :

**Sample Name:** Kitchen utensils  
**Sample Model:** YFC-038  
**Sample Received Date:** May 28.2023  
**Testing Period:** May 28.2023 To Jun.01.2023  
**Test Requested :** German Food, Food and Commodity Law (LFGB), Sections 30 and 31, and Regulation (EC) No 1935/2004, Regulation (EU) No.10/2011, Regulation (EU) 2016/1416 and Regulation (EU) No.2017/752, Regulation (EU) 2018/213 and Regulation (EU) 2020/1245.on materials and articles that come into contact with food.  
**Test Method:** Please refer to next page(s).  
**Test Result:** Please refer to next page(s).

Signed for and on behalf of:

Andy

Andy Zheng  
Technical Director



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## Sample Description:

No.	Material
1	Silicone
2	Wooden handle
3	Stainless steel

## Test Results: (No.1):

### 1.1. Sensorial examination odour and taste test

**Test Method:** Sensorial examination odour and taste test with reference to DIN10955:2004-06;

Test condition: Odour test:100℃,2 hours;

Taste test: sunflower oil ,100℃,2 hours.

Test Item (s)	Result	Limit
Sensorial examination odour (Point scale)	0	2.5
Sensorial examination taste (Point scale)	0	2.5

Note: Odour/Taste Grade  
0= No perceptible difference  
1= Just perceivable difference(still difficult to define)  
2= Slight difference  
3= Marked difference  
4= Strong difference  
5. This part of the test is holistic test

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## 1.2.Extract able components

Test Method:In house

Material	Test Condition	Limit (%)	Result(mg/dm <sup>2</sup> )			Conclusion
			1st	2nd	3rd	
Silicone	Distilled water, 100℃,2 hours	0.5	<0.1	<0.1	<0.1	PASS
	10% Ethanol(v/v),100℃,2hours	0.5	<0.1	<0.1	<0.1	PASS
	3% Acetic acid(w/v), 100℃,2hours	0.5	<0.1	<0.1	<0.1	PASS

## 1.3.Overall migration

Test Method:Refer to EN1186-1:2002,EN1186-2:2002

Material	Test Condition	Limit (mg/dm <sup>2</sup> )	Result(mg/dm <sup>2</sup> )			Conclusion
			1st	2nd	3rd	
Silicone	Vegetable oil, 175℃,2hours	10	<3	<3	<3	PASS

**Note:**1.mg/dm<sup>2</sup> = milligram per square decimetre of surface area of material or article.

2.mg/kg = milligrams of the constituents released per kilogram of foodstuff.

3.The requirement in accordance with the Commission Regulation (EU) 2020/1245.

## 1.4.Colour Release

Test Method:In house

Test Item(s)	Limit	Result	Conclusion
Visible Color Migration in 2% Acetic Acid (W/V)	No color release observed	Negative	PASS
Visible Color Migration in Coconut Oil	No color release observed	Negative	PASS

**Note:**Negative = No color release observed, Positive = Color release observed.

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## 1.5. Total Lead(Pb) and Cadmium(Cd)

Test Method: with reference to EN 1388-2:1996

Test Item(s)	Unit	Result	MDL	Limit
Lead(Pb)	mg/dm <sup>2</sup>	N.D.	0.001	0.010
Cadmium(Cd)	mg/dm <sup>2</sup>	N.D.	0.001	0.005

### Note:

(1)mg/dm<sup>2</sup> = milligram per square decimeter;

(2) mg/kg=ppm=0.0001%;

(3)N.D.=Not Detected(<MDL);

(4)MDL=Method Detection Limit;

## 1.6. Volatile organic matter (VOM) test:

Test Item	Test condition	Unit	Limit	Result	Conclusion
Volatile organic matter (VOM)	200°C, 4h	%	0.5	0.10	Pass

The Permissible Limit were quote from AP(2004)4.

### Note:

(1)mg/dm<sup>2</sup> = milligram per square decimeter;

(2) mg/kg=ppm=0.0001%;

(3)N.D.=Not Detected(<MDL);

(4)MDL=Method Detection Limit;

(5)< = less than.

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## 1.7. Polycyclic Aromatic Hydrocarbon (PAHs) content test:

Test Method: With reference to AfPS GS 2019:01 PAK and measured by GC-MS.

Compound	CAS Number	Unit	MDL	Result
(1) Naphthalene (NAP)	91-20-3	ppm	0.2	N.D.
(2) Phenanthrene (PHE)	85-01-8	ppm	0.2	N.D.
(3) Anthracene (ANT)	120-12-7	ppm	0.2	N.D.
(4) Fluoranthene (FLT)	206-44-0	ppm	0.2	N.D.
(5) Pyrene (PYE)	129-00-0	ppm	0.2	N.D.
(6)Benzo(a)anthracene (BaA)	56-55-3	ppm	0.2	N.D.
(7)Chrysene (CHR)	218-01-9	ppm	0.2	N.D.
(8)Benzo(b)fluoranthene (BbFa)	205-99-2	ppm	0.2	N.D.
(9)Benzo(k)fluoranthene (BkFa)	207-08-9	ppm	0.2	N.D.
(10).Benzo(a)pyrene (BaP)	50-32-8	ppm	0.2	N.D.
(11)Indeno(1,2,3-cd)pyrene (IPY)	193-39-5	ppm	0.2	N.D.
(12)Dibenzo(a,h)anthracene (DBAhA)	53-70-3	ppm	0.2	N.D.
(13)Benzo(g,hi)perylene (BPE)	191-24-2	ppm	0.2	N.D.
(14)Benzo[j]fluoranthene(BjFa)	205-82-3	ppm	0.2	N.D.
(15) Benzo[e]pyrene(BeP)	192-97-2	ppm	0.2	N.D.
Sum of PAHs(No.2-No.5)	--	ppm	--	N.D.
Sum of PAHs(No.1-No.15)	--	ppm	--	N.D.

- Note:**
1. mg/kg= ppm
  2. N.D.=No Detection(<MDL)
  3. MDL =Method Detection Limit

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## AfPS 2019:01:Restraining maximum values for products

Parameter	Category 1	Category 2		Category3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30S (long-term skin)or frequent contact.		Materials not falling under category 1or2 with foreseeable contact to skin for less than 30S (short-term skin).	
		Toy under 2009/48/EC	Other products	Toy under 2009/48/EC	Other products
Naphthalene(NAP)	<1 mg/kg	<2 mg/kg	<2 mg/kg	<10 mg/kg	<10 mg/kg
Each of PAHs(No.6-No.15)	<0.2 mg/kg	<0.2 mg/kg	<0.5 mg/kg	<0.5 mg/kg	<1.0mg/kg
Sum of PAHs(No.2-No.5)	<1mg/kg	<5 mg/kg	<10 mg/kg	<20 mg/kg	<50 mg/kg
Sum of PAHs(No.1-No.15)	<1mg/kg	<5 mg/kg	<10 mg/kg	<20 mg/kg	<50 mg/kg

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## 1.8. Peroxide value test:

Test Method: With reference to European Pharmacopoeia 2005

Test Item	Limit	Result	Conclusion
Peroxide value	Absent	Absent	Pass

The Permissible Limit were quote from BfR Recommendation XV.

## 1.9. Platinum(Pt) test:

Method: Solvent extraction followed by analysis using ICP-AES

Test Item	Unit	MDL	Limit	Result	Conclusion
Platinum(Pt)	mg/kg	5	50	N.D.	Pass

The Permissible Limit were quote from BfR Recommendation XV.

## 1.10. Organotin content:

**Test Requested :** In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR Recommendation XV.

**Test Method :** Solvent extraction followed by analysis using GC-MS.

Test Item(s)	Limit	Unit	MDL	Result	Conclusion
Monobutyl tin (MBT)	Absent	mg/kg	0.02	ND	PASS
Dibutyl tin (DBT)	Absent	mg/kg	0.02	ND	PASS
Tributyl tin (TBT)	Absent	mg/kg	0.02	ND	PASS
Monooctyl tin (MOT)	Absent	mg/kg	0.02	ND	PASS
Tetrabutyl tin (TTBT)	Absent	mg/kg	0.02	ND	PASS
Dioctyl tin (DOT)	Absent	mg/kg	0.02	ND	PASS
Triphenyl tin (TPT)	Absent	mg/kg	0.02	ND	PASS

### Note:

- (1) mg/kg=ppm=0.0001%;
- (2)N.D.=Not Detected(<MDL);
- (3)MDL=Method Detection Limit;

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## Test Results: (No.2):

### 2.1. Sensorial examination odour and taste test

**Test Method:** Sensorial examination odour and taste test with reference to DIN10955:2004-06;

Test condition: Odour test:100°C,2 hours;

Taste test: sunflower oil ,100°C,2 hours.

Test Item (s)	Result	Limit
Sensorial examination odour (Point scale)	0	2.5
Sensorial examination taste (Point scale)	0	2.5

Note: Odour/Taste Grade

0= No perceptible difference

1= Just perceivable difference(still difficult to define)

2= Slight difference

3= Marked difference

4= Strong difference

5. This part of the test is holistic test

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## 2.2.Extractable Heavy metals

Test Item	Simulant Used	Test Condition	Result (mg/dm <sup>2</sup> )	Limit (mg/dm <sup>2</sup> )
Pb	3 % acetic acid	Reflux temperature	<0.003	0.003
Cd	3 % acetic acid	Reflux temperature	<0.002	0.002
Hg	3 % acetic acid	Reflux temperature	<0.002	0.002

The Permissible Limit were quote from AP 2002

## 2.3.Test Method: EPA 3540C:1996

Test Item	Unit	MDL	Result	Limit
Polychlorodiphenyl(PCB)	mg/kg	0.01	N.D.	0.15

Note: 1. mg/kg= ppm  
2. MDL = Method Detection Limit  
3. N.D.=Not Detection(<MDL)  
4.The Permissible Limit were quote from AP 2002

## 2.4.Test Method: EN 717-1:2004

Test Item	Unit	MDL	Result	Limit
Formaldehyde	mg/kg	0.01	N.D.	15

Note: 1. mg/kg= ppm  
2. MDL = Method Detection Limit  
3. N.D.=Not Detection(<MDL)  
4.The Permissible Limit were quote from AP 2002

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## Test Results: (No.3):

### 3.1. Sensorial examination odour and taste test

**Test Method:** Sensorial examination odour and taste test with reference to DIN10955:2004-06;

Test condition: Odour test:100℃,2 hours;

Taste test: sunflower oil ,100℃,2 hours.

Test Item (s)	Result	Limit
Sensorial examination odour (Point scale)	0	2.5
Sensorial examination taste (Point scale)	0	2.5

Note: Odour/Taste Grade  
0= No perceptible difference  
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## 3.2.Extractable Heavy metals test (Unit: mg/kg):

Test conditions: Artificial tap water, 100°C, 2h, tested by ICP-MS & ICP-AES.

Soluble Element	Results		MDL	Limit		Conclusion
	Migration of 1st+2nd	Migration of 3rd		Migration of 1st+2nd	Migration of 3rd	
Aluminum (Al)	N.D.	N.D.	0.2	35.0	5.0	Pass
Antimony (Sb)	N.D.	N.D.	0.02	0.28	0.04	Pass
Chromium (Cr)	N.D.	N.D.	0.1	1.75	0.25	Pass
Cobalt (Co)	N.D.	N.D.	0.01	0.14	0.02	Pass
Copper (Cu)	N.D.	N.D.	0.2	28.0	4.0	Pass
Ferrum (Fe)	N.D.	N.D.	0.5	280.0	40.0	Pass
Manganese (Mn)	N.D.	N.D.	0.2	12.6	1.8	Pass
Molybdenum (Mo)	N.D.	N.D.	0.02	0.84	0.12	Pass
Nickle (Ni)	N.D.	N.D.	0.02	0.98	0.14	Pass
Silver (Ag)	N.D.	N.D.	0.02	0.56	0.08	Pass
Tin (Sn)	N.D.	N.D.	1.0	700.0	100	Pass
Vanadium (V)	N.D.	N.D.	0.005	0.07	0.01	Pass
Zinc (Zn)	N.D.	N.D.	1.0	35.0	5.0	Pass
Arsenic (As)	N.D.	N.D.	0.001	0.014	0.002	Pass
Barium (Ba)	N.D.	N.D.	0.2	8.4	1.2	Pass
Beryllium (Be)	N.D.	N.D.	0.005	0.07	0.01	Pass
Cadmium (Cd)	N.D.	N.D.	0.002	0.035	0.005	Pass
Lead (Pb)	N.D.	N.D.	0.002	0.070	0.010	Pass
Lithium (Li)	N.D.	N.D.	0.01	0.336	0.048	Pass
Mercury (Hg)	N.D.	N.D.	0.002	0.021	0.003	Pass
Thallium (Tl)	N.D.	N.D.	0.0001	0.0007	0.0001	Pass
Magnesium (Mg)	N.D.	N.D.	1.0	---	---	---
Titanium (Ti)	N.D.	N.D.	1.0	---	---	---

The Permissible Limit were quote from CM/Res(2013)9

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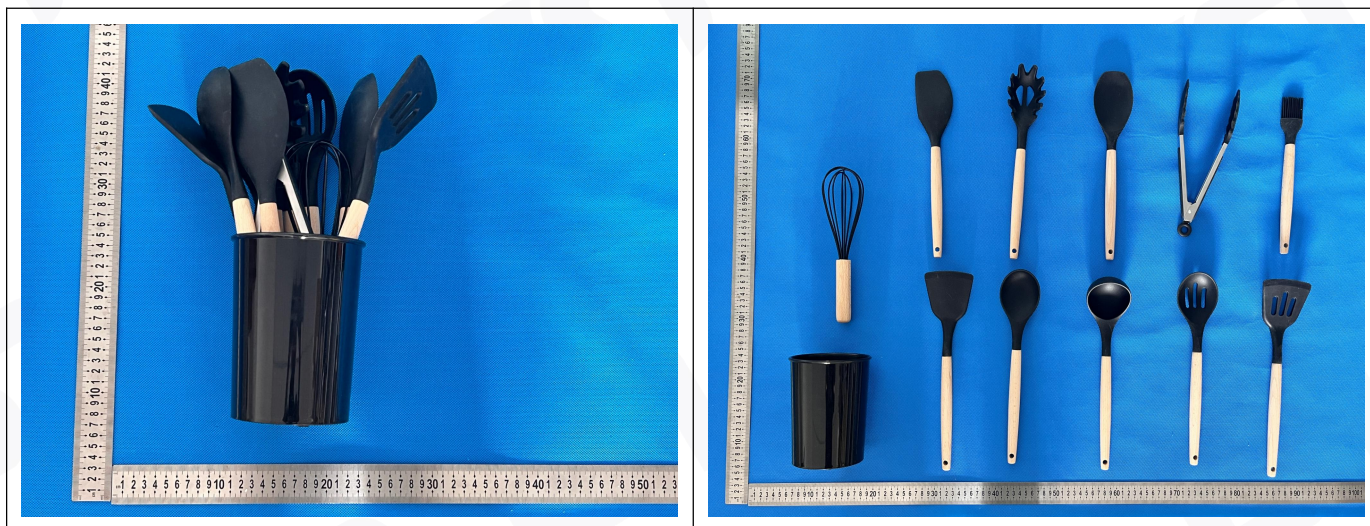
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## Sample photo:



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