



SUBJECT Chemical Test

TEST LOCATION TÜV SÜD China

TÜV SÜD Products Testing (Shanghai) Co., Ltd.
B-3/4, No.1999 Du Hui Road, Minhang District
Shanghai 201108, P.R. China

CLIENT NAME

CLIENT ADDRESS

TEST PERIOD 24-Dec-2018~07-Jan-2019

- TEST REQUEST**
1. In accordance with German Food & Feed Acts of September 1, 2005 (LFGB), Section 30 and 31, European COMMISSION REGULATION (EU) No 10/2011 and its amendments and Recommendation of the BfR.
 2. Bisphenol A content
 3. Polycyclic Aromatic Hydrocarbons (PAHs) content in accordance with AfPS GS 2014: 01
 4. Short Chain of Chlorinated paraffin (C₁₀₋₁₃) (SCCP) content
 5. Cadmium content and Phthalates content in according with European Commission Regulation 1907/2006 (REACH Act)

CONCLUSION **PASS**
The submitted sample with test part(s) 001~005 were found to **comply with** the respective requirement(s) of aqueous food as stated in the German Food & Feed Acts LFGB Section 30 and 31. Hence, the submitted sample with test part(s) 001~005 also **comply with** Article 3 of Regulation (EC) No. 1935/2004 (Materials and articles intended to come into contact with food).

Prepared By

Cynthia Cao

(Cynthia Cao)
Report Drafter

Authorized By



(Joyce Zhang)
Authorized Signatory

Note: (1) General Terms & Conditions as mentioned overleaf. (2) The results relate only to the items tested.(3) The test report shall not be reproduced except in full without the written approval of the laboratory.(4) Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda. (5)The test result can be used by client for quality control.



RECEIPT DATE / TEST DATE

24-Dec-2018/ 24-Dec-2018

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED

BY/ ON BEHALF OF THE CLIENTS AS



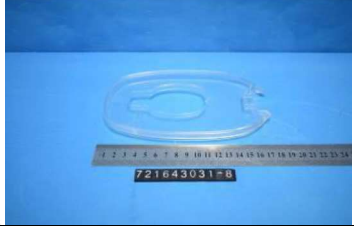




Sample Name: Water Pitcher and Water filter


F00-1; F00-2; F00-3; F00-4; F00-5; F00-6; F00-7; F00-8; F00-9; F-010; F-011;F-012;
F-013; F-014; F-015; AEL01; MDF02; MDF03; MDF04

Batch No./Date: /

Manufacturer: /

SAMPLE NO.	TEST PART	DESCRIPTION	PHOTOGRAPH
721643031-1	001	Transparent plastic	
721643031-2	002	White plastic	
721643031-3	003	White silicone rubber	
721643031-4	004	White plastic	
721643031-5	005	Transparent plastic	

721643031-6	006	Whole product	
721643031-7	007	Transparent plastic	
721643031-8	008	Transparent plastic	
721643031-9	009	Yellow particles	
721643031-10	010	Black particles	
721643031-11	011	Transparent plastic	
721643031-12	012	Yellow particles, transparent plastic and white silicone rubber	

721643031-13	013	Transparent plastic and white plastic	
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TEST METHOD(S)

- For material : Plastics
 - Overall migration test with reference to REGULATION (EU) No 10/2011 and its amendments on plastic materials and articles intended to come into contact with food.
 - As specified in REGULATION (EU) No 10/2011 and its amendments; with reference to EN 1186: Part 3 (Test methods for overall migration into aqueous food simulants by total immersion) / EN 1186: Part 9 (Test methods for overall migration into aqueous food stimulants by article filling)

For material : Silicone rubber

 - Extractable components test for compliance with the Recommendation of the BfR "Kunststoffe in Lebensmittelverkehr" Part XV "Silicone"
 - With reference to Bundesgesundheitsbl. 46(2003) 362
- For material : Plastics/ Silicone rubber
 - Primary Aromatic Amine
 - With reference to EN13130-1:2004, followed by Kunststoffe im Lebensmittelverkehr, Book 2, Teil B II,XXI
- For material : Plastics
 - Specific Migration: Heavy metal (Al, Ba, Co, Cu, Fe, Li, Mn, Zn, Ni)
 - As specified in REGULATION (EU) No 10/2011 and its amendments; with reference to EN13130-1:2004, followed by ICP-MS.
- For material : Plastics/ Silicone rubber
 - Peroxide value in water extractive for compliance with the Recommendation of the BfR "Kunststoffe im Lebensmittelverkehr"
 - With reference to Bundesgesundheitsbl. 40 (1997), 412.
- For material : Plastics
 - Chromium, Vanadium, Zirconium and Hafnium content in plastic for compliance with the Recommendation of the BfR "Kunststoffe im Lebensmittelverkehr" Part VII"
 - Microwave digestion, followed by analysis using Atomic Absorption Spectrometry (AAS) or Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES).
- For material : Plastics
 - Volatile Organic Components for compliance with the Recommendation of the BfR "Kunststoffe im Lebensmittelverkehr" Part V or Part VI
 - With reference to Bundesgesundheitsbl. 14 (1971), 265.
- For material : Silicone rubber
 - Volatile Organic Matters for compliance with the Recommendation of the BfR "Kunststoffe im Lebensmittelverkehr" Part XV "Silicone"
 - With reference to Bundesgesundheitsbl. 46 (2003) 362
- Total Platinum
 - Catalytic Residue – Platinum
 - Microwave digestion, then followed by ICP-OES



9. For material : Plastics
 - Specific Migration of Acrylonitrile
 - With reference to EN13130-1:2004, with reference to EN 13130-3 Determination of acrylonitrile in food and food simulants
10. For material : Plastics
 - Specific Migration of 1,3 - Butadiene
 - With reference to EN13130-15 Determination of 1,3-butadiene in food stimulants.
11. Color release
 - With reference to Kunststoffe im Lebensmittelverkehr Book II, Teil B II, IX
12. Sensory test
 - With reference to DIN 10955.
 - The submitted sample was immersed in distilled water at 40°C for 10 days. After this treatment treated water was examined by panels with regard to any divergence in smell and taste.
13. Bisphenol A content
 - The sample was extracted by acetonitrile, then Bisphenol A content of solution was analyzed by LC/MS/MS
14. Polycyclic Aromatic Hydrocarbons (PAHs) content
 - In accordance with AfPS GS 2014: 01 [Reporting Limit = 0.01 mg/kg]
15. Short Chain of Chlorinated paraffin (C10~13) (SCCP) content
 - Solvent extraction by ultrasonic bath and GC-MS analysis
16. Cadmium Content Test
 - Microwave digestion, analysed by ICP [Reporting Limit = 2 mg/kg]
17. Phthalates content test
 - Solvent extraction by ultrasonic bath and GC-MS analysis. [Reporting Limit = 0.005%]

TEST RESULT(S)

1. Overall Migration Test

Simulant(s) Used	Test Condition	Result(s) [mg/dm ²]		Maximum Permissible Limit [mg/dm ²]
		001	002	
10% Ethanol	40°C for 10 days	<0.5	<0.5	10

Simulant(s) Used	Test Condition	Result(s) [mg/dm ²]		Maximum Permissible Limit [mg/dm ²]
		004	005	
10% Ethanol	40°C for 10 days	<0.5	<0.5	10

- Note:
1. mg/dm² denotes milligram per square decimeter
 2. < denotes less than
 3. Specification is quoted from (EU) No 10/2011



Extractable components test - With reference to Bundesgesundheitsbl. 46(2003) 362

Simulant(s) Used	Test Condition	Result(s) [%]	Maximum Permissible Limit [%]
		003	
Distilled water	Reflux for 5 hours	<0.1	0.5
3% Acetic acid	Reflux for 5 hours	<0.1	0.5
10% Ethanol	Reflux for 5 hours	<0.1	0.5

Note: 1. % denotes percentage by weight
2. < denotes less than

2. Primary Aromatic Amine

- With reference to EN13130-1:2004, followed by Kunststoffe im Lebensmittelverkehr, Book 2, Teil B II,XXI
- Test condition: 10% Ethanol, 40°C for 10 days

Test Item(s)	Result(s) [mg/kg]			Maximum Permissible Limit [mg/kg]
	001	002	003	
Primary Aromatic Amine	<0.01	<0.01	<0.01	0.01

Test Item(s)	Result(s) [mg/kg]		Maximum Permissible Limit [mg/kg]
	004	005	
Primary Aromatic Amine	<0.01	<0.01	0.01

Note: 1. mg/kg denotes milligram per kilogram foodstuff
2. < denotes less than
3. Detection limit is 0.01 mg/kg

3. Specific Migration: Heavy metal - Al, Ba, Co, Cu, Fe, Li, Mn, Zn, Ni

- Test condition: 10% Ethanol, 40°C for 10 days

Test Item(s)	Result(s) [mg/kg]		Maximum Permissible Limit [mg/kg]
	001	002	
Aluminum	<0.1	<0.1	1
Barium	<0.1	<0.1	1
Cobalt	<0.05	<0.05	0.05
Copper	<0.5	<0.5	5
Iron	<1.0	<1.0	48
Lithium	<0.1	<0.1	0.6
Manganese	<0.05	<0.05	0.6
Zinc	<1.0	<1.0	5
Nickel	<0.002	<0.002	0.02



Test Item(s)	Result(s) [mg/kg]		Maximum Permissible Limit [mg/kg]
	004	005	
Aluminum	<0.1	<0.1	1
Barium	<0.1	<0.1	1
Cobalt	<0.05	<0.05	0.05
Copper	<0.5	<0.5	5
Iron	<1.0	<1.0	48
Lithium	<0.1	<0.1	0.6
Manganese	<0.05	<0.05	0.6
Zinc	<1.0	<1.0	5
Nickel	<0.002	<0.002	0.02

Note: 1. mg/kg denotes milligram per kilogram foodstuff
2. < denotes less than

4. Peroxide Value

- With reference to Bundesgesundheitsbl. 40 (1997), 412

Test Item(s)	Result(s)		Maximum Permissible Limit
	001	003	
Peroxide Value	Absent	Absent	Absent

Test Item(s)	Result(s)		Maximum Permissible Limit
	004	005	
Peroxide Value	Absent	Absent	Absent

5. Total Chromium, Vanadium, Zirconium and Hafnium Content

- Microwave digestion, followed by AAS or ICP analysis

Test Item(s)	Result(s) [mg/kg]	Maximum Permissible Limit [mg/kg]
	002	
Chromium content	3.0	10
Vanadium content	<15.0	20
Zirconium content	<15.0	100
Hafnium Content	<15.0	100

Note: 1. mg/kg denotes milligram per kilogram
2. < denotes less than
3. Specification is quoted from BfR plastic recommendation part XXI



6. Volatile Organic Compounds
- With reference to Bundesgesundheitsbl. 14 (1971) 265.

Test Item(s)	Result(s) [mg/dm ²]		Maximum Permissible Limit [mg/dm ²]
	001	004	
Volatile Organic Components	5.2	6.0	15

Test Item(s)	Result(s) [mg/dm ²]	Maximum Permissible Limit [mg/dm ²]
	005	
Volatile Organic Components	6.6	15

Note: 1. mg/dm² denotes milligram per square decimeter.

7. Volatile Organic Matter - With reference to Bundesgesundheitsbl. 46 (2003) 362

Test Item(s)	Result(s) [%]	Maximum Permissible Limit [%]
	003	
Volatile Organic Matter	<0.1	0.5

Note: 1. % denotes percentage by weight
2. < denotes less than

8. Total Platinum - Microwave digestion, then followed by ICP-OES

Test Item(s)	Result(s) [mg/kg]	Maximum Permissible Limit [mg/kg]
	003	
Total Platinum	<5	50

Note: 1. mg/kg denotes milligram per kilogram
2. < denotes less than

9. Specific Migration of Acrylonitrile
- Test condition: 3% acetic acid, 40°C for 10 days

Test Item(s)	Result(s) [mg/kg]		Maximum Permissible Limit [mg/kg] 001
	004	005	
Acrylonitrile	<0.01	<0.01	<0.01

Note: 1. mg/kg denotes milligram per kilogram foodstuff
2. < denotes less than
3. Specification is quoted from (EU) No 10/2011

10. Specific Migration of 1,3 - Butadiene
- Test condition: 3% acetic acid, 40°C for 10 days

Test Item(s)	Result(s) [mg/kg]	Maximum Permissible Limit [mg/kg]
	004	
1,3 - Butadiene	<0.01	0.01

Note: 1. mg/kg denotes milligram per kilogram foodstuff
2. Method Detection Limit is 0.01 mg/kg foodstuff
3. < denotes less than



11. Color release

- With reference to Kunststoffe im Lebensmittelverkehr Book II, Teil B II, IX

Simulant(s) Used	Test Condition	Result(s)		Permissible Limit
		002	004	
Distilled water	50°C for 5 hours	No bleeding	No bleeding	No bleeding

Note: 1. No bleeding denotes no difference was found between blank and sample
2. Bleeding denotes staining was found from sample

12. Sensory test - With reference to DIN 10955

Sample(s)	Testing Parameter	Grading result(s)	Recommended level
001	Transfer of taste	0	<3
	Transfer of smell	0	<3

Note: 1. < denotes less than.
2. Available grading are listed as follow:
Grading 0: No perceptible taste/smell deviation
1: Just perceptible taste/smell deviation
2: Weak taste/smell deviation
3: Clear taste/smell deviation
4: Strong taste/smell deviation

13. Bisphenol A content

Test Item(s)	Result(s) [mg/kg]			Maximum Permissible Limit [mg/kg]
	001	002	003	
Bisphenol A content	<0.01	<0.01	<0.01	0.01

Test Item(s)	Result(s) [mg/kg]			Maximum Permissible Limit [mg/kg]
	004	005	007	
Bisphenol A content	<0.01	<0.01	<0.01	0.01

Test Item(s)	Result(s) [mg/kg]		Maximum Permissible Limit [mg/kg]
	008	009	
Bisphenol A content	<0.01	<0.01	0.01

Note: 1. mg/kg denotes milligram per kilogram
2. < denotes less than.



14. Polycyclic Aromatic Hydrocarbons (PAHs) content
- In accordance with AfPS GS 2014: 01 [Reporting Limit = 0.01 mg/kg]

Compounds	Results [mg/kg]		Method Detection Limit [mg/kg]
	010	011#	
Chrysene	ND	ND	0.01
Benzo[a]anthracene	ND	ND	0.01
Benzo[b]fluoranthene	ND	ND	0.01
Benzo[j]fluoranthene	ND	ND	0.01
Benzo[k]fluoranthene	ND	ND	0.01
Benzo[e]pyrene	ND	ND	0.01
Benzo[a]pyrene	ND	ND	0.01
Indeno[1,2,3-cd]pyrene	ND	ND	0.01
Dibenzo[ah]anthracene	ND	ND	0.01
Benzo[ghi]perylene	ND	ND	0.01
Naphthalene	ND	ND	0.01
Acenaphthylene	ND	ND	0.01
Acenaphthene	ND	ND	0.01
Fluorene	ND	ND	0.01
Phenanthrene	ND	ND	0.01
Anthracene	ND	ND	0.01
Fluoranthene	ND	ND	0.01
Pyrene	ND	ND	0.01
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene and Fluoranthene	ND	ND	--
Group PAH	ND	ND	--
Category as in AfPS GS 2014: 01	Category 1		--
Conclusion	PASS	PASS	--

Compounds	Results [mg/kg]		Method Detection Limit [mg/kg]
	012#	013#	
Chrysene	ND	ND	0.01
Benzo[a]anthracene	ND	ND	0.01
Benzo[b]fluoranthene	ND	ND	0.01
Benzo[j]fluoranthene	ND	ND	0.01
Benzo[k]fluoranthene	ND	ND	0.01
Benzo[e]pyrene	ND	ND	0.01
Benzo[a]pyrene	ND	ND	0.01
Indeno[1,2,3-cd]pyrene	ND	ND	0.01
Dibenzo[ah]anthracene	ND	ND	0.01
Benzo[ghi]perylene	ND	ND	0.01
Naphthalene	ND	ND	0.01
Acenaphthylene	ND	ND	0.01
Acenaphthene	ND	ND	0.01
Fluorene	ND	ND	0.01
Phenanthrene	ND	ND	0.01



Anthracene	ND	ND	0.01
Fluoranthene	ND	ND	0.01
Pyrene	ND	ND	0.01
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene and Fluoranthene	ND	ND	--
Group PAH	ND	ND	--
Category as in AfPS GS 2014: 01	Category 1		--
Conclusion	PASS	PASS	--

- Note:
1. mg/kg denotes milligram per kilogram
 2. ND denotes not detected, less than method detection limit
 3. Limits and Categories for PAH in product according to AfPS GS 2014: 01

Limits and Categories

Parameter [mg/kg]	Category 1	Category 2		Category 3	
		Toys acc to directive 2009/48/EC	All other products acc to ProdSG	Toys acc to directive 2009/48/EC	All other products acc to ProdSG
	Materials indented to be put in the mouth, or materials of toys for children aged < 36 months with intended skin contact (contact >30s)	Materials not covered by category 1, with foreseeable skin contact for longer than 30 s (long-term skin contact) or repeated short term skin contact*		Materials not covered by category 1 or 2 with foreseeable skin contact up to 30 s (short term skin contact)	
Benzo[a]pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[e]pyrene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[a]anthracene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[b]fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[j]fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[k]fluoranthene	<0.2	<0.2	<0.5	<0.5	<1
Chrysene	<0.2	<0.2	<0.5	<0.5	<1
Dibenzo[a,h]anthracene	<0.2	<0.2	<0.5	<0.5	<1
Benzo[ghi]perylene	<0.2	<0.2	<0.5	<0.5	<1
Indeno[1,2,3-cd]pyrene	<0.2	<0.2	<0.5	<0.5	<1
Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	<1 sum	<5 sum	<10 sum	<20 sum	<50 Sum
Naphthalene	<1	<2		<10	
Sum 18 PAH	<1	<5	<10	<20	<50

* Definition „short-term repetitive contact with the human skin“ from REACH Annex XVII Nr. 50 amendment (COMMISSION REGULATION (EU) No 1272/2013)

15. Short Chain of Chlorinated paraffin(C10~13) (SCCP) content

Test Item(s)	Result(s) [mg/kg]		Method Detection Limit [mg/kg]
	010	011#	
Short Chain of Chlorinated paraffin(C _{10~13}) (SCCP)	ND	ND	100



Test Item(s)	Result(s) [mg/kg]		Method Detection Limit [mg/kg]
	012#	013#	
Short Chain of Chlorinated paraffin(C ₁₀₋₁₃) (SCCP)	ND	ND	100

Note: 1. mg/kg denotes milligram per kilogram
2. ND denotes not detected and less than method detection limit

16. Cadmium Content Test

Element	Result [mg/kg]			Maximum Permissible Limit * [mg/kg]
	011#	012#	013#	
Total Cadmium	<2	<2	<2	100

Note: 1. < denotes less than
2. mg/kg denotes milligram per kilogram
3. * denotes the limit was quoted from (EC) No. 1907/2006 ANNEX XVII

17. Phthalates content test

Test Item(s)	CAS No.	Result [%]	MDL [%]	Maximum Permissible Limit* [%]
		011#		
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	<0.005	0.005	0.1
Dibutyl phthalate (DBP)	84-74-2	<0.005	0.005	0.1
Benzyl Butyl phthalate (BBP)	85-68-7	<0.005	0.005	0.1
Di-isononyl phthalate (DINP)	68515-48-0	<0.005	0.005	0.1
Di-isodecyl phthalate (DIDP)	26761-40-0	<0.005	0.005	0.1
Di-n-octyl phthalate (DNOP)	117-84-0	<0.005	0.005	0.1

Test Item(s)	CAS No.	Result [%]	MDL [%]	Maximum Permissible Limit* [%]
		012#		
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	<0.005	0.005	0.1
Dibutyl phthalate (DBP)	84-74-2	<0.005	0.005	0.1
Benzyl Butyl phthalate (BBP)	85-68-7	<0.005	0.005	0.1
Di-isononyl phthalate (DINP)	68515-48-0	<0.005	0.005	0.1
Di-isodecyl phthalate (DIDP)	26761-40-0	<0.005	0.005	0.1
Di-n-octyl phthalate (DNOP)	117-84-0	<0.005	0.005	0.1

Test Item(s)	CAS No.	Result [%]	MDL [%]	Maximum Permissible Limit* [%]
		013#		
Di(2-ethylhexyl) phthalate (DEHP)	117-81-7	<0.005	0.005	0.1
Dibutyl phthalate (DBP)	84-74-2	<0.005	0.005	0.1
Benzyl Butyl phthalate (BBP)	85-68-7	<0.005	0.005	0.1
Di-isononyl phthalate (DINP)	68515-48-0	<0.005	0.005	0.1
Di-isodecyl phthalate (DIDP)	26761-40-0	<0.005	0.005	0.1
Di-n-octyl phthalate (DNOP)	117-84-0	<0.005	0.005	0.1

Note:

1. % denotes percentage of weight
2. < denotes less than
3. MDL denotes Method detection limit
4. * denotes the limit was quoted from (EC) No. 1907/2006 ANNEX XVII

The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

Notice: The samples pictured below have been confirmed by the customer to be of the same material as the sample tested.



-END OF THE TEST REPORT-