

Test Report No.: 244461040d 001

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Client: XIAMEN MODERN DELTA LTD.
Jinxing Road No.61-69, Hubin North Road, Xiamen 361012, P.R.China

Test item(s): Tritan 200mL straw water bottle

Identification / Model No(s): ED-103

Sample obtaining method: Sending by customer

Condition at delivery: Test item complete and undamaged.

Sample Receiving date: 2022-11-02

Testing Period: 2022-11-16 to 2022-11-30

Place of testing: Chemical laboratory Shanghai, Toys laboratory Shanghai



Test specification:

Selected test(s) by client:

Sensorial examination	PASS
Global Migration	PASS
Global Migration from Silicone	PASS
Colourfastness	PASS
Specific Migration of Metals	PASS
Specific Migration of 2,2,4,4-tetramethylcyclobutane-1,3-diol	PASS
Volatile compounds content	PASS
N-Nitrosamines and N-Nitrosatable substances release	PASS
Formaldehyde release	PASS
Color Fastness	PASS
EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods -Mechanical requirements and tests	PASS
EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods -Clause 8.6 Migration of certain elements	PASS

Test conclusion:

Other Information:

Country of Origin: China
Report Reference No: 244461040a 001

For and on behalf of TÜV Rheinland (Shanghai) Co., Ltd.

2022-12-07

Amy Zhao / Technical Manager

Neo Yang / Assistant Manager

Date

Name / Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed. This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report.

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Indication: Food contact
Product: Commodity, contact with foodstuff

Description of test specimen

Item
 4 Tritan 200mL straw water bottle

1. Material List:

Sample No.	Material	Color	Location	Refer
4	Whole Product	Multicolor	ED-103 Tritan 200mL straw water bottle	
4A	Plastic, Tritan	Transparent	Body	244461040a 001 1A
4B	Plastic, PP	Dk.purple	Lid	
4C	Plastic, PP	Translucent	Disc	
4D	Silicone	Translucent	Straw/Seal ring	
4E	Silicone	White	Bead	
4F	Plastic	Lt. purple	Top lid	
4G	Plastic	Yellow	Top lid	
4H	Plastic	Green	Cap	
4I	Plastic	Lt. orange	Top lid	
4J	Plastic	Orange	Cap	
4K	Plastic	Lt. blue	Top lid	
4L	Plastic	Blue	Cap	
4M	Plastic	Pink	Top lid	
4N	Plastic	Rosy	Cap	
4O	Plastic	Lt. violet	Top lid	
4P	Plastic	Violet	Cap	
4Q	Plastic	Lemon	Top lid	
4R	Plastic	Blackish green	Cap	
4S	Plastic	Lt. turquoise	Top lid	
4T	Plastic	Turquoise	Cap	

Remark:

According to client's information 4A is produced of same material of 244461040a 001 1A. Tests were performed on randomly selected items.

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2. Overall Results:

Test No.	Tested Item	Conclusion
1	Sensorial examination	Pass
2	Global Migration	Pass
3	Global Migration from Silicone	Pass
4	Colourfastness	Pass
5	Specific Migration of Metals	Pass
6	Specific Migration of 2,2,4,4-tetramethylcyclobutane-1,3-diol	Pass
7	Volatile compounds content	Pass
8	N-Nitrosamines and N-Nitrosatable substances release	Pass
9	Formaldehyde release	Pass
10	Color Fastness	Pass
11	EN 14350:2020 Child care articles – Drinking equipment - Safety requirements and test methods - Mechanical requirements and tests	Pass
12	EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods - Clause 8.6 Migration of certain elements	Pass

3. Results

3.1 Sensorial examination

Test method: It is examined to the extent of food simulant being used, which comes into contact with the product, undergoes detectable changes in taste and smell.

For this purpose, the food simulant was stored in the product under the below mentioned time and temperature. Afterwards, the food simulant was examined by an appropriate number of tasters with regard to any divergence in smell and taste. Another test sample, which was used as a reference, was treated by the same way except that it had no contact with the product to be tested.

Before testing, the product had been cleaned according to the product's instruction manual or in the absence of such manual, by normal household cleaning.

The test is carried out on the basis of ISO 13302 by paired comparison test:

- Evaluation scheme:
- 0 = No discernible deviation
 - 1 = Barely discernible deviation
 - 2 = Weak deviation
 - 3 = Clear deviation
 - 4 = Strong deviation
 - Limit: 3 (failed)

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Water	2 hour(s) / 70 °C

Test No.:	1^
Sample No.:	4A
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

Test No.:	2
Sample No.:	4B
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

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Test No.:	3
Sample No.:	4C
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

Test No.:	4
Sample No.:	4D
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

Test No.:	5
Sample No.:	4E
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

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3.2 Global Migration

Test method: The migratory behaviour is examined with reference to Commission Regulation (EU) No 10/2011 and its amendments.

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C
Ethanol 50 %	2 hour(s) / 70 °C

Test No.:	1^					
Sample No.:	4A					
Migration ratio:	160 ml / 1.8 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 50 %	mg/dm ²	2	<RL	<RL	<RL	10

Test No.:	2					
Sample No.:	4B					
Migration ratio:	1000 ml / 6 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 50 %	mg/dm ²	2	<RL	<RL	<RL	10

Test No.:	C					
Sample No.:	4C					
Migration ratio:	1000 ml / 6 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Acetic acid 3 %	mg/dm ²	2	<RL	<RL	<RL	10
Ethanol 50 %	mg/dm ²	2	<RL	<RL	<RL	10

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Abbreviations:

- RL = Reporting Limit
- mg/dm² = Milligram per square decimetre
- ml/dm² = Mililitre per square decimetre
- < = Less than

Remark:

- *1 Stability test is included in this test parameter.
- *2 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.

3.3 Global Migration from Silicone

Test method: The migratory behaviour is examined with reference to Chapter V, Article 18 of Commission regulation 10/2011 and its amendments. Deviating to the regulations the following tests were performed as orientating single tests.

Limit: Resolution AP (2004) 5 on silicones used for food contact applications

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C
Ethanol 50 %	2 hour(s) / 70 °C

Test No.:	1		
Sample No.:	4D		
Parameter	Unit	Result	Limit
Acetic acid 3 %	mg/dm ²	5	10
Ethanol 50 %	mg/dm ²	4	10

Test No.:	2		
Sample No.:	4E		
Parameter	Unit	Result	Limit
Acetic acid 3 %	mg/dm ²	4	10
Ethanol 50 %	mg/dm ²	4	10

Abbreviations:

mg/dm² = Milligram per square decimetre

< = Less than

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3.4 Colourfastness

Test method: Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food, Appendix III

Limit: Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food - *No transfer of colorants to foodstuffs is permitted*

Test No.:	1
Sample No.:	4B
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample
Water	No
Acetic acid 3 %	No
Ethanol 50 %	No

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3.5 Specific Migration of Metals

Test method: The migratory behaviour was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by ICP-MS.

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulant and condition were applied:

Food simulant	Test duration / Temperature
Acetic acid 3 %	2 hour(s) / 70 °C

Test No.:	1 [^]					
Material No.:	4A					
Migration ratio:	160 ml / 1.8 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	<RL	<RL	<RL	1
Antimony	mg/kg	0.01	<RL	<RL	<RL	0.04
Arsenic	mg/kg	0.01	<RL	<RL	<RL	n.d.
Barium	mg/kg	0.1	<RL	<RL	<RL	1
Cadmium	mg/kg	0.002	<RL	<RL	<RL	n.d.
Total Chromium	mg/kg	0.01	<RL	<RL	<RL	n.d.
Cobalt	mg/kg	0.01	<RL	<RL	<RL	0.05
Copper	mg/kg	0.5	<RL	<RL	<RL	5
Iron	mg/kg	5	<RL	<RL	<RL	48
Lead	mg/kg	0.01	<RL	<RL	<RL	n.d.
Lithium	mg/kg	0.1	<RL	<RL	<RL	0.6
Manganese	mg/kg	0.1	<RL	<RL	<RL	0.6
Mercury	mg/kg	0.01	<RL	<RL	<RL	n.d.
Nickel	mg/kg	0.01	<RL	<RL	<RL	0.02
Zinc	mg/kg	1	<RL	<RL	<RL	5
Europium	mg/kg	0.01	<RL	<RL	<RL	--
Gadolinium	mg/kg	0.01	<RL	<RL	<RL	--
Lanthanum	mg/kg	0.01	<RL	<RL	<RL	--
Terbium	mg/kg	0.01	<RL	<RL	<RL	--
Sum of Lanthanide substances	mg/kg	0.01	<RL	<RL	<RL	0.05

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Test No.:	2					
Material No.:	4B					
Migration ratio:	1000 ml / 6 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	<RL	<RL	<RL	1
Antimony	mg/kg	0.01	<RL	<RL	<RL	0.04
Arsenic	mg/kg	0.01	<RL	<RL	<RL	n.d.
Barium	mg/kg	0.1	<RL	<RL	<RL	1
Cadmium	mg/kg	0.002	<RL	<RL	<RL	n.d.
Total Chromium	mg/kg	0.01	<RL	<RL	<RL	n.d.
Cobalt	mg/kg	0.01	<RL	<RL	<RL	0.05
Copper	mg/kg	0.5	<RL	<RL	<RL	5
Iron	mg/kg	5	<RL	<RL	<RL	48
Lead	mg/kg	0.01	<RL	<RL	<RL	n.d.
Lithium	mg/kg	0.1	<RL	<RL	<RL	0.6
Manganese	mg/kg	0.1	<RL	<RL	<RL	0.6
Mercury	mg/kg	0.01	<RL	<RL	<RL	n.d.
Nickel	mg/kg	0.01	<RL	<RL	<RL	0.02
Zinc	mg/kg	1	<RL	<RL	<RL	5
Europium	mg/kg	0.01	<RL	<RL	<RL	--
Gadolinium	mg/kg	0.01	<RL	<RL	<RL	--
Lanthanum	mg/kg	0.01	<RL	<RL	<RL	--
Terbium	mg/kg	0.01	<RL	<RL	<RL	--
Sum of Lanthanide substances	mg/kg	0.01	<RL	<RL	<RL	0.05

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Test No.:	3					
Material No.:	4C					
Migration ratio:	1000 ml / 6 dm ²					
Parameter	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
Aluminium	mg/kg	0.1	<RL	<RL	<RL	1
Antimony	mg/kg	0.01	<RL	<RL	<RL	0.04
Arsenic	mg/kg	0.01	<RL	<RL	<RL	n.d.
Barium	mg/kg	0.1	<RL	<RL	<RL	1
Cadmium	mg/kg	0.002	<RL	<RL	<RL	n.d.
Total Chromium	mg/kg	0.01	<RL	<RL	<RL	n.d.
Cobalt	mg/kg	0.01	<RL	<RL	<RL	0.05
Copper	mg/kg	0.5	<RL	<RL	<RL	5
Iron	mg/kg	5	<RL	<RL	<RL	48
Lead	mg/kg	0.01	<RL	<RL	<RL	n.d.
Lithium	mg/kg	0.1	<RL	<RL	<RL	0.6
Manganese	mg/kg	0.1	<RL	<RL	<RL	0.6
Mercury	mg/kg	0.01	<RL	<RL	<RL	n.d.
Nickel	mg/kg	0.01	<RL	<RL	<RL	0.02
Zinc	mg/kg	1	<RL	<RL	<RL	5
Europium	mg/kg	0.01	<RL	<RL	<RL	--
Gadolinium	mg/kg	0.01	<RL	<RL	<RL	--
Lanthanum	mg/kg	0.01	<RL	<RL	<RL	--
Terbium	mg/kg	0.01	<RL	<RL	<RL	--
Sum of Lanthanide substances	mg/kg	0.01	<RL	<RL	<RL	0.05

Abbreviations:

RL = Reporting limit

n.d. = Not detected

mg/kg = Milligram per kilogram

ml/dm² = Millilitre per square decimetre

< = Less than

Remark:

- *1 Single component with an amount below reporting limit was not considered by the calculation of the sum. In the case of all lanthanide substances europium, gadolinium, lanthanum and terbium were not detected, the result is stated n.d.

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- *2 Stability test is included in this test parameter.
- *3 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.

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3.6 Specific Migration of 2,2,4,4-tetramethylcyclobutane-1,3-diol

Test method: The migratory behavior was examined with reference to Commission Regulation (EU) No. 10/2011 and its amendments. Determination by GC-MS.

Limit: With reference to Commission Regulation (EU) No 10/2011 and its amendments

The following food simulant and condition were applied:

Food simulant	Test duration / Temperature
Ethanol 50 %	2 hour(s) / 70 °C

Test No.:	1^						
Sample No.:	4A						
Migration ratio:	220 ml / 1.93 dm ²						
Parameter	CAS No.	Unit	RL	1 st Migration Result	2 nd Migration Result	3 rd Migration Result	Limit
2,2,4,4-tetramethyl cyclobutane-1,3-diol	3010-96-6	mg/kg	1	<RL	<RL	<RL	5

Abbreviations:

RL = Reporting Limit

mg/kg = Milligram per kilogramm

ml/dm² = Mililitre per square decimetre

< = Less than

Remark :

*1 Stability test is included in this test parameter.

*2 The migration results do not show increase between subsequent tests and therefore it meets the stability requirement.

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3.7 Volatile compounds content

Test Method: EN 14350:2020 Clause 8.4

Test result:

Test No.:	1			
Material No.:	4D			
Parameter	Unit	RL	Result	Limit
Volatile compounds content [#]	%	0.1	0.18	0.5

Test No.:	2			
Material No.:	4E			
Parameter	Unit	RL	Result	Limit
Volatile compounds content [#]	%	0.1	< RL	0.5

Abbreviation:

- < = Less than
- RL = Reporting Limit
- % = percent

Remark:

Results for volatile compounds content have been adjusted with analytical tolerances of 0.3% if the condition stated in EN 14350:2020 clause 8.4 is fulfilled.

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3.8 N-Nitrosamines and N-Nitrosatable substances release**Test method:** EN 14350:2020 Clause 8.5; with reference to EN 12868:2017**Test result:**

Test No.			1					
Material No.			4D					
Test Parameter	CAS No.	Unit	Migratable N-Nitrosamines			Migratable N-Nitrosatable Substances		
			RL	Requirement	Test result	RL	Requirement	Test result
NDMA	62-75-9	mg/kg	0.001	--	< RL	0.001	--	< RL
NDEA	55-18-5	mg/kg	0.001	--	< RL	0.001	--	< RL
NDPA	621-64-7	mg/kg	0.001	--	< RL	0.001	--	< RL
NDiBA	997-95-5	mg/kg	0.001	--	< RL	0.001	--	< RL
NDBA	924-16-3	mg/kg	0.001	--	< RL	0.001	--	< RL
NPIP	100-75-4	mg/kg	0.001	--	< RL	0.001	--	< RL
NPYR	930-55-2	mg/kg	0.001	--	< RL	0.001	--	< RL
NMOR	59-89-2	mg/kg	0.001	--	< RL	0.001	--	< RL
NEPhA	612-64-6	mg/kg	0.005	--	< RL	0.005	--	< RL
NMPhA	614-00-6	mg/kg	0.005	--	< RL	0.005	--	< RL
NDiNA	1207995-62-7	mg/kg	0.005	--	< RL	0.005	--	< RL
NDBzA	5336-53-8	mg/kg	0.005	--	< RL	0.005	--	< RL
Total#	--	mg/kg	0.005	0.01	< RL	0.005	0.1	< RL
Conclusion	--	--	Pass			Pass		

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Test No.			2					
Material No.			4E					
Test Parameter	CAS No.	Unit	Migratable N-Nitrosamines			Migratable N-Nitrosatable Substances		
			RL	Requirement	Test result	RL	Requirement	Test result
NDMA	62-75-9	mg/kg	0.001	--	< RL	0.001	--	< RL
NDEA	55-18-5	mg/kg	0.001	--	< RL	0.001	--	< RL
NDPA	621-64-7	mg/kg	0.001	--	< RL	0.001	--	< RL
NDiBA	997-95-5	mg/kg	0.001	--	< RL	0.001	--	< RL
NDBA	924-16-3	mg/kg	0.001	--	< RL	0.001	--	< RL
NPIP	100-75-4	mg/kg	0.001	--	< RL	0.001	--	< RL
NPYR	930-55-2	mg/kg	0.001	--	< RL	0.001	--	< RL
NMOR	59-89-2	mg/kg	0.001	--	< RL	0.001	--	< RL
NEPhA	612-64-6	mg/kg	0.005	--	< RL	0.005	--	< RL
NMPhA	614-00-6	mg/kg	0.005	--	< RL	0.005	--	< RL
NDiNA	1207995-62-7	mg/kg	0.005	--	< RL	0.005	--	< RL
NDBzA	5336-53-8	mg/kg	0.005	--	< RL	0.005	--	< RL
Total#	--	mg/kg	0.005	0.01	< RL	0.005	0.1	< RL
Conclusion	--	--	Pass			Pass		

Abbreviation:

< = Less than

RL = Reporting Limit

mg/kg = milligram per kilogram

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Remark:

- * List of Migratable N-Nitrosamines and Migratable N-Nitrosatable Substances.

Parameter	Abbreviation
N-nitrosodimethylamine	NDMA
N-nitrosodiethylamine	NDEA
N-nitrosodipropylamine	NDPA
N-nitrosodiisobutylamine	NDiBA
N-nitrosodibutylamine	NDBA
N-nitrosopiperidine	NPIP
N-nitrosopyrrolidine	NPYR
N-nitrosomorpholine	NMOR
N-nitrosoethylphenylamine	NEPhA
N-nitrosomethylphenylamine	NMPhA
N-nitrosodiisononylamine	NDiNA
N-nitrosodibenzylamine	NDBzA

- ** Single components with an amount of less than the detection limit were not considered by the calculation of the sum. In the case of all compounds were not detected, the results is stated <RL.
- # Results for total N-nitrosatable substances or N-nitrosamines have been adjusted with analytical tolerances if the condition stated in EN 12868:2017 clause 11.1 is fulfilled:
Analytical tolerance for the total quantity of N-nitrosamines: 0.01 mg/kg.
Analytical tolerance for the total quantity of N-nitrosatable substances: 0.1 mg/kg.

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3.9 Formaldehyde release

Test Method: EN 14350:2020 Clause 8.7; with reference to EN 71-11:2005

Test Result :

				Test No.	1	2
				Material No.:	4D	4E
Parameter	CAS No.	Unit	RL	Requirement	Result	Result
Formaldehyde	50-00-0	mg/l	0.2	0.5	< RL	< RL
Conclusion					PASS	PASS

Abbreviation:

- < = Less than
- RL = Reporting Limit
- mg/l = milligram per liter

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3.10 Color Fastness

Test Method: EN 14350:2020 Clause 8.8

Test result

Test No.:	1	2
Material No.:	4B	4F
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	3	4
Material No.:	4G	4H
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	5	6
Material No.:	4I	4J
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	7	8
Material No.:	4K	4L
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

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Test No.:	9	10
Material No.:	4M	4N
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	11	12
Material No.:	4O	4P
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	13	14
Material No.:	4Q	4R
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

Test No.:	15	16
Material No.:	4S	4T
Parameter Colourfastness to	Difference between blank and filter paper contacted with sample	Difference between blank and filter paper contacted with sample
3% Acetic acid	No	No
Coconut fat	No	No

^ Test results refer to 244461040a 001

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4. EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods - Mechanical requirements and tests

Test Result:

Test No:	T001
Material No:	4
6 Construction and mechanical properties - General and sample preparation	
6.4 Boiling	PASS
7 Construction and mechanical requirements and tests	
7.2 Decoration, inscription and decals	PASS
7.3 Visual and tactile examination	PASS
7.4 Small parts	PASS
7.6 Requirements and tests for containers	PASS
7.7 Requirements and tests for drinking accessories	PASS
7.8 Protective covers	PASS
7.9 Handles and clips	PASS
7.10 Finger traps	PASS
7.11 Protruding parts	PASS
9 Consumer packaging	PASS
10 Product information	
10.1 General	PASS
10.2 Purchase information	PASS
10.3 Warnings	PASS
10.4 Instructions for use	PASS

The clause and/or sub-clause would be indicated only in the test report whichever applicable. The comprehensive result report is available upon request.

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5. EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods - Mechanical requirements and tests

Test Method: EN 14350:2020 Clause 8.6, with reference to EN 71-3:2019

Test Result:

				Test No.	T001	T002	T003
				Material No.	4F	4B	4G
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

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Test Result:

Test No.				T004	T005	T006
Material No.				4H	4Q	4R
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

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Test Result:

Test No.				T007	T008	T009
Material No.				4A	4D	4E
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

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Test Result:

Test No.				T010	T011	T012
Material No.				4K	4L	4M
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

Test Result:

Test No.				T013	T014	T015
Material No.				4N	4O	4P
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

Test Result:

Test No.				T016	T017	T018
Material No.				4I	4J	4S
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	Result
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	< RL
Antimony (Sb)	mg/kg	5	120	< RL	< RL	< RL
Arsenic (As)	mg/kg	5	10	< RL	< RL	< RL
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	< RL
Boron (B)	mg/kg	10	3200	< RL	< RL	< RL
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	< RL
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	< RL
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	< RL
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	< RL
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	< RL
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	< RL
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	< RL
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	< RL
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	< RL
Selenium (Se)	mg/kg	10	100	< RL	< RL	< RL
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	< RL
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	< RL
Organic Tin [^]	mg/kg	0.2	2.5	-	-	-
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	< RL

Abbreviation: < less than

RL = Reporting Limit

mg/kg denotes milligram per kilogram

[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)

According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

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Test Result:

				Test No.	T019	T020
				Material No.	4T	4C
Test Parameter	Unit	RL	Regulatory Requirement	Result	Result	
Aluminium (Al)	mg/kg	10	6000	< RL	< RL	
Antimony (Sb)	mg/kg	5	120	< RL	< RL	
Arsenic (As)	mg/kg	5	10	< RL	< RL	
Barium (Ba)	mg/kg	2.5	4000	< RL	< RL	
Boron (B)	mg/kg	10	3200	< RL	< RL	
Cadmium (Cd)	mg/kg	1	3.6	< RL	< RL	
Chromium III (Cr(III))	mg/kg	10	100	< RL	< RL	
Chromium VI (Cr(VI))	mg/kg	0.045	0.002#	< RL	< RL	
Cobalt (Co)	mg/kg	2.5	2.8	< RL	< RL	
Copper (Cu)	mg/kg	2.5	1660	< RL	< RL	
Lead (Pb)	mg/kg	2.5	5.0	< RL	< RL	
Manganese (Mn)	mg/kg	2.5	600	< RL	< RL	
Mercury (Hg)	mg/kg	2.5	20	< RL	< RL	
Nickel (Ni)	mg/kg	2.5	56	< RL	< RL	
Selenium (Se)	mg/kg	10	100	< RL	< RL	
Strontium (Sr)	mg/kg	2.5	12000	< RL	< RL	
Tin (Sn)	mg/kg	0.5	40000	< RL	< RL	
Organic Tin [^]	mg/kg	0.2	2.5	-	-	
Zinc (Zn)	mg/kg	10	10000	< RL	< RL	

Abbreviation: < less than
 RL = Reporting Limit
 mg/kg denotes milligram per kilogram
[^] denotes Organic tin are not necessary to be determined when the Tin concentration is less than calculated limit (0.72 mg/kg)
 # According to EN 14350:2020, the limit of Cr(VI) is 0.002 mg/kg. However, the technical specificities were considered and whenever the Cr(VI) level measured in the sample is below the Limit of Quantification of the valid version of EN 71-3, the sample is to be considered passed.

Remark:

* Cr(VI) content has been performed with reference to EN 71-3:2019, Annex F (analyzed by LC-ICP-MS or IC-ICP-MS/MS). Cr(III) content was confirmed by calculation.

6. Sample picture(s):



Item 4



Item 4



Item 4



Sample 4



Sample 4A~4F

尺寸:110*135mm



Packaging

The packaging was provided by client.



Instructions

The instructions were provided by client.

- END -

