

Test Report No.: 244461040j 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): Straw replacement for Tritan 300mL water bottle

Identification / Model No(s): ED-505

Sample obtaining method: Sending by customer

Condition at delivery: Test item complete and undamaged.

Sample Receiving date: 2022-11-02

Testing Period: No

Place of testing: Chemical laboratory Shanghai, Toys laboratory Shanghai



Test specification:

Performed parameter(s) for the compliance with the following regulations concerning materials in contact with foodstuff: **Test conclusion:** PASS

- Regulation (EC) No 1935/2004
- Volatile compounds content PASS
- N-Nitrosamines and N-Nitrosatables substances release PASS
- Formaldehyde release PASS
- EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods -Clause 8.6 Migration of certain elements PASS

Other Information:

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

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

2022-12-12

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
10 Straw replacement for Tritan 300mL water bottle

1. Material List:

Sample No.	Material	Color	Location	Refer
10	Whole Product	Multicolor	Straw replacement for Tritan 300mL water bottle	
10A	Silicone	Translucent	Straw	244461040d 001 4D

Remark:

According to client's information food contact parts are produced of same material of 244461040d 001 4D. Tests results refer to 244461040d 001 as indicated.

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2. Overall Results:

Test No.	Tested Item	Conclusion
1	Sensorial examination	Pass
2	Global Migration from Silicone	Pass
3	Volatile compounds content	Pass
4	N-Nitrosamines and N-Nitrosatable substances release	Pass
5	Formaldehyde release	Pass
6	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.:	10A
Parameter:	Result
Transfer of Smell:	0
Transfer of Taste:	0

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3.2 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.:	10A		
Parameter	Unit	Result	Limit
Acetic acid 3 %	mg/dm ²	5	10
Ethanol 50 %	mg/dm ²	4	10

Abbreviations:

mg/dm² = Milligram per square decimetre

< = Less than

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3.3 Volatile compounds content

Test Method: EN 14350:2020 Clause 8.4

Test result:

Test No.:	1 ^{^^}			
Material No.:	10A			
Parameter	Unit	RL	Result	Limit
Volatile compounds content [#]	%	0.1	0.18	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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3.4 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.			10A					
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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Abbreviation:

- < = Less than
- RL = Reporting Limit
- mg/kg = milligram per kilogram

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-nitrosatables 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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3.5 Formaldehyde release

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

Test Result :

				Test No.	1 [^]
				Material No.:	10A
Parameter	CAS No.	Unit	RL	Requirement	Result
Formaldehyde	50-00-0	mg/l	0.2	0.5	< RL
Conclusion					PASS

Abbreviation:

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

[^] Test results refer to 244461040d 001

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4. EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods - Clause 8.6 Migration of certain elements

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

Test Result:

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

5. Sample picture(s):



Item 10



Sample 10

尺寸:40*25*194.5mm



Sample 10



Packaging

The packaging was provided by client.

- END -

