

Test Report

Applicant: Simpla Biotech Co., Ltd.
No. 50, Neixi Rd., Luzhu Dist.,
Taoyuan City 338, Taiwan (R.O.C.)

Number : TWNC01076516

Issue Date : May 13, 2022

Sample Description:

One (1) Groups of Submitted Sample Said To Be :

Item Name : Feeding Bowl-Side 淺碗/Baby Spoon 幼兒湯匙/Baby Fork 幼兒叉子
/Baby Feeding Spoon 幼兒餵食匙/Kids Fork 兒童叉子/Kids Spoon 兒
童湯匙/Cup 杯子/Cutting Board 砧板/Feeding bowl-deep 深碗/Bear
paw plate 熊掌盤

Material : PLA (Polylactic acid)
Country of Origin : Taiwan
Date Sample Received : Apr 22, 2022
Date Test Started : Apr 25, 2022

Test Conducted:

As requested by the applicant, for details please refer to attached pages.

Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	As per European Commission Regulation (EU) No. 10/2011 and its amendments	
	– Overall Migration Test for Repeated Use Plastic Food Contacting Materials/Articles	Pass (#1)
	– Specific Migration of Heavy Metal Test for Repeated Use Plastic Food Contacting Materials/Articles	Pass (#1)
	Specific Migration of Primary Aromatic Amines Test for Repeated Use Plastic Food Contacting Materials/Articles	Pass (#1)
	– As per European Commission Regulation (EU) No. 10/2011 and its amendments and article 3 of (EU) No. 284/2011	
	Dishwasher test	See Test Conducted
	– As per applicant's request	

Authorized By:
On behalf of Intertek Testing Services
Taiwan Limited

Matt Wang
Director



Signed by:

Thomas Chou

Thomas Chou
Manager



Test Report

Number : TWNC01076516

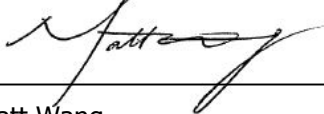
Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Submitted Sample	Child use and care articles - cutlery and feeding utensils - safety requirements and tests – As per applicant's request with reference to EN 14372 : 2004 excluding clause 5.4 & 7	Pass
	European Standard On Child Use And Care Articles – Cutlery And Feeding Utensils (EN 14372) – Migration Of Certain Elements	Pass (#1)
	– Phthalates	Pass (#1)
	Child care articles - Drinking equipment - Safety requirements and test methods – As per applicant's request with reference to EN 14350 : 2020 excluding clause 8, 9 & 10	Pass
	As per BS EN 14350:2020 – 19 Toxic Element Migration Test	Pass
	– Colour Fastness Test	Pass

Remarks: #1 = As requested by the applicant, the test was conducted only on components listed in this report. Other components were not tested.

Note : The applicant has certified that proper label and marking and instructions will be put on the final product, and the label and marking and instructions certified meet the requirement of this standard. It is applicant's responsibility to make sure the final product with the label and marking and instructions as certified.

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Director



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Manager



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Test Conducted :

1. Overall Migration Test for Repeated Use Plastic Food Contacting Materials/Articles

As per European Commission regulation (EU) No. 10/2011 and its amendments, the migration test shall be carried out three times on a signal tested sample for repeated use materials and articles.

I. Test Condition:
OM 3: 70°C for 2 hours

II. Test Result:
Food Simulant: 3%(w/v) acetic acid

<u>Tested Sample</u>	<u>Result (mg/kg food)</u>			<u>Limit (mg/kg food)</u>
	<u>1st Test</u>	<u>2nd Test</u>	<u>3rd Test</u>	
(1)	1	ND	ND	60

Food Simulant: 10%(w/v) ethanol

<u>Tested Sample</u>	<u>Result (mg/kg food)</u>			<u>Limit (mg/kg food)</u>
	<u>1st Test</u>	<u>2nd Test</u>	<u>3rd Test</u>	
(1)	3	1	ND	60

Food Simulant: Fatty food simulant

<u>Tested Sample</u>	<u>Result (mg/kg food)</u>			<u>Limit (mg/kg food)</u>
	<u>1st Test</u>	<u>2nd Test</u>	<u>3rd Test</u>	
(1)	3	2	2	60

Remarks: ND = Not detected
 Detection limit = 1 mg/kg food
 Solvents & test condition were selected based on applicant's request.
 The limit of 60 mg/kg was quoted for samples intended for infants and young children.
 According to point 3.3.2 in Annex V to (EU) No. 10/2011 amended by (EU) No. 2020/1245, the overall migration in the second test shall not exceed the level observed in the first test, and the overall migration in the third test shall not exceed the level observed in the second test. Compliance with the overall migration limit shall be verified on the basis of the level of the overall migration found in the third test.



Test Conducted :

2. Specific Migration of Heavy Metal Test for Repeated Use Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and its amendments, the migration test shall be carried out three times on a signal tested sample for repeated use materials and articles.

I. Test Condition:
70°C for 2 hours

II. Test Result:
Food simulant: 3% (w/v) acetic acid
Tested Sample: (1)(#2)

Element	Result (mg/kg food)			Detection Limit (mg/kg food)	Limit (mg/kg food)
	1 st Test	2 nd Test	3 rd Test		
Aluminium (Al)	ND	ND	ND	0.1	1
Antimony (Sb)	ND	ND	ND	0.01	0.04
Arsenic (As)	ND	ND	ND	0.01	ND
Barium (Ba)	ND	ND	ND	0.1	1
Cadmium (Cd)	ND	ND	ND	0.002	ND
Chromium (Cr)	ND	ND	ND	0.01	ND
Cobalt (Co)	ND	ND	ND	0.01	0.05
Copper (Cu)	ND	ND	ND	0.5	5
Iron (Fe)	ND	ND	ND	5	48
Lead (Pb)	ND	ND	ND	0.01	ND
Lithium (Li)	ND	ND	ND	0.1	0.6
Manganese (Mn)	ND	ND	ND	0.1	0.6
Mercury (Hg)	ND	ND	ND	0.01	ND
Nickel (Ni)	ND	ND	ND	0.01	0.02
Zinc (Zn)	ND	ND	ND	0.5	5
Europium (Eu)	ND	ND	ND	0.01	--
Gadolinium (Gd)	ND	ND	ND	0.01	--
Lanthanum (La)	ND	ND	ND	0.01	--
Terbium (Tb)	ND	ND	ND	0.01	--
Sum of Eu, Gd, La and Tb	ND	ND	ND	--	0.05

Remarks: ND = Not detected
#2 = The result was expressed in mg/kg applying a surface to volume ratio of 6 dm² per kg, which was quoted for samples that are containers or are comparable to containers or which can be filled, with a capacity of less than 500 milliliters or more than 10 liters.

Solvents & test condition were selected based on applicant's request.

According to point 2.1.6 in Annex V to (EU) No. 10/2011 amended by (EU) No. 2020/1245, the specific migration in the second test shall not exceed the level observed in the first test, and the specific migration in the third test shall not exceed the level observed in the second test. Compliance with the specific migration limit shall be verified on the basis of the level of the specific migration found in the third test.



Test Conducted :

3. Specific Migration of Primary Aromatic Amines Test for Repeated Use Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and its amendments, the migration test shall be carried out three times on a signal tested sample for repeated use materials and articles.

I. Test Condition:
70°C for 2 hours

II. Test Result:
Food simulant: 3% (w/v) acetic acid
Tested Sample: (1)(#2)

Compound	CAS No.	Result (mg/kg food)			Detection Limit (mg/kg food)	Limit (mg/kg food)
		1 st Test	2 nd Test	3 rd Test		
4-Aminodiphenyl	92-67-1	ND	ND	ND	0.002	ND
Benzidine	92-87-5	ND	ND	ND	0.002	ND
4-Chloro- <i>o</i> -toluidine	95-69-2	ND	ND	ND	0.002	ND
2-Naphthylamine	91-59-8	ND	ND	ND	0.002	ND
<i>o</i> -Aminoazotoluene	97-56-3	ND	ND	ND	0.002	ND
5-Nitro- <i>o</i> -toluidine	99-55-8	ND	ND	ND	0.002	ND
<i>p</i> -Chloraniline	106-47-8	ND	ND	ND	0.002	ND
2,4-Diaminoanisole	615-05-4	ND	ND	ND	0.002	ND
4,4-Diaminodiphenylmethane	101-77-9	ND	ND	ND	0.002	ND
3,3'-Dichlorobenzidine	91-94-1	ND	ND	ND	0.002	ND
3,3'-Dimethoxybenzidine	119-90-4	ND	ND	ND	0.002	ND
3,3'-Dimethylbenzidine	119-93-7	ND	ND	ND	0.002	ND
3,3'-Dimethyl-4,4'-diamino diphenylmethane	838-88-0	ND	ND	ND	0.002	ND
<i>p</i> -Cresidine	120-71-8	ND	ND	ND	0.002	ND
4,4'-Methylen-bis-(2-chloroaniline)	101-14-4	ND	ND	ND	0.002	ND
4,4'-Oxydianiline	101-80-4	ND	ND	ND	0.002	ND
4,4'-Thiodianiline	139-65-1	ND	ND	ND	0.002	ND
<i>o</i> -Toluidine	95-53-4	ND	ND	ND	0.002	ND
2,4-Toluene-diamine	95-80-7	ND	ND	ND	0.002	ND
2,4,5-Trimethylaniline	137-17-7	ND	ND	ND	0.002	ND
2-Methoxyaniline	90-04-0	ND	ND	ND	0.002	ND
4-Aminoazobenzene	60-09-3	ND	ND	ND	0.002	ND
<i>m</i> -Phenyldiamine	108-45-2	ND	ND	ND	0.002	ND
Benzoguanamine	91-76-9	ND	ND	ND	0.002	5
4,4'-Methylenebis-(3-chloro-2,6-diethylaniline)	106246-33-7	ND	ND	ND	0.01	0.05
Sum of other primary aromatic amines [^]	--	ND	ND	ND	0.01	0.01

Remarks: ND = Not detected
 #2 = The result was expressed in mg/kg applying a surface to volume ratio of 6 dm² per kg, which was quoted for samples that are containers or are comparable to containers or which can be filled, with a capacity of less than 500 milliliters or more than 10 liters.
 ^ = Other primary aromatic amines are *p*-Phenyldiamine, Aniline, 2,4-Xylidine, 2,6-Xylidine, 3-Methoxyaniline, 2,6-Toluene-diamine, 1,5-Diaminonaphthalene, 4-Ethoxyaniline, 3-Amino-4-methoxybenzanilide, 3-Amino-4-methylbenzamide and 2-Amino-5-methylbenzoic acid

Solvents & test condition were selected based on applicant's request.

According to point 2.1.6 in Annex V to (EU) No. 10/2011 amended by (EU) No. 2020/1245, the specific migration in the second test shall not exceed the level observed in the first test, and the specific migration in the third test shall not exceed the level observed in the second test. Compliance with the specific migration limit shall be verified on the basis of the level of the specific migration found in the third test.



Test Conducted :

4. Dishwasher Safe Test

The submitted samples were subjected to the following wash cycles and visual examination by naked eye was made in comparison with the control sample.

Wash condition: Wash / Rinse / Dry normal cycle (Duration approximately 90 minutes / Temperature over 150°F/65°C).

Samples located : Top rack

Number of cycle : Ten (10) cycles.

Detergent : Cascade (90 gram).

Dishwasher : Whirlpool quiet wash plus.

Number of sample tested : One (1) piece per style; Total ten (10) styles.

Result : No visible damage or change was observed after washing.

5. Child Use And Care Articles - Cutlery And Feeding Utensils – Safety Requirements And Tests

As per applicant’s request with reference to EN 14372 : 2004

Clauses	Test items	Assessment
5	Requirements	
5.1	General	P
5.2	General requirements	
5.2.1	Visual and tactile examination	P
5.2.2	Sharp points	P
5.2.3	Sharp edges	P
5.2.4	Small parts	P
5.2.5	Holes (finger traps)	P
5.2.6	Printed decorations	P
5.3	Mechanical requirements	
5.3.1	Tensile strength	P
5.3.2	Torque test	P
5.3.3	Tear resistance	NA
5.3.4	Strength/rigidity	P
5.3.5	Drop test	P
7	Product information	
7.1	General	See Note
7.2	Purchase information	See Note
7.3	Instruction for use	See Note
7.4	Warnings	See Note

Remarks : P = Pass ; NA = Not Applicable



Test Conducted :

6. Migration Of Certain Elements

As per EN 14372 : 2004 - Child Use And Care Articles - Cutlery And Feeding Utensils clause 5.4.2.2 and the analytical method specified in EN71-3:2019+A1:2021 for 8 heavy elements, acid extraction method was used and toxic elements content were determined by Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES).

<u>Element</u>	<u>Result (mg/kg)</u> (1)	<u>DL</u> (mg/kg)	<u>Limit</u> (mg/kg)
Sol. Antimony (Sb)	ND	10	15
Sol. Arsenic (As)	ND	10	10
Sol. Barium (Ba)	ND	10	100
Sol. Cadmium (Cd)	ND	5	20
Sol. Lead (Pb)	ND	10	25
Sol. Chromium (Cr)	ND	10	10
Sol. Mercury (Hg)	ND	10	10
Sol. Selenium (Se)	ND	10	100

Remarks: mg/kg = Milligram per kilogram based on dry weight of sample
 Sol. = Soluble
 ND = Not detected
 DL = Detection limit

7. Phthalate Content

As per EN 14372: 2004, by solvent extraction and determined by Gas Chromatography-Mass Spectrometer (GC-MS) analysis.

<u>Compound</u>	<u>Result (%)</u> (1)	<u>Limit (%)</u>
Dibutyl Phthalate (DBP)	ND	--
Diethyl Hexyl Phthalate (DEHP)	ND	--
Di-(Iso-Nonyl) Phthalate (DINP)	ND	--
Benzyl Butyl Phthalate (BBP)	ND	--
Di-(N-Octyl) Phthalate (DNOP)	ND	--
Di-(Iso-Decyl) Phthalate (DIDP)	ND	--
Total :	ND	0.1

Remarks: % = Percentage based on weight of tested sample
 Detection limit = 0.005% (for each compound)
 ND = Not detected



Test Conducted :

8. Child care articles - Drinking equipment - Safety requirements and test methods

As per applicant's request with reference to EN 14350 : 2020

Clauses	Test items	Assessment
1	Scope	
2	Normative references	
3	Terms and definitions	
4	Description	
5	Test equipment and tolerances	
6	Construction and mechanical properties – General and sample preparation	
7	Construction and mechanical requirements and tests	
7.1	Order of testing for construction and mechanical properties	
7.2	Decoration, inscription and decals	P
7.3	Visual and tactile examination	P
7.4	Small parts	P
7.5	Sealing discs	NA
7.6	Containers	NA
7.7	Drinking accessories	NA
7.8	Protective covers	NA
7.9	Handles and clips	P
7.10	Finger traps	P
7.11	Protruding parts	NA
7.12	Cords and loops	NA
9	Consumer packaging	See Note
10	Product information	
10.1	General	See Note
10.2	Purchase information	See Note
10.3	Warnings	See Note
10.4	Instructions for use	See Note
10.5	Supply chain information for products that contain vulcanised rubber	See Note
11	Test report	

Remarks : P = Pass ; NA = Not Applicable



Test Conducted :

9. Toxic Elements Analysis

As per BS EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods and followed by High Performance Liquid Chromatography-Photodiode Array Detector (HPLC-DAD), Liquid Chromatography /Inductively Coupled Plasma Mass Spectrometer (LC/ICP-MS), Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES), Inductively Coupled Plasma Mass Spectrometer (ICP-MS) and Gas Chromatography-Mass Spectrometer (GC-MS), if necessary.

Element	Result (mg/kg)	Detection limit (mg/kg)	Limit (mg/kg)
	(2)		
Aluminium (Al)	ND	100	6000
Antimony (Sb)	ND	10	120
Arsenic (As)	ND	1.0	10
Barium (Ba)	ND	10	4000
Boron (B)	ND	50	3200
Cadmium (Cd)	ND	0.5	3.6
Chromium (III) (Cr(III))	ND	5.0	100
Chromium (VI) (Cr(VI))	ND	0.025	0.0265
Cobalt (Co)	ND	1.0	28
Copper (Cu)	ND	10	1660
Lead (Pb)	ND	1.0	5.0
Manganese (Mn)	ND	10	600
Mercury (Hg)	ND	1.0	20
Nickel (Ni)	ND	10	56
Selenium (Se)	ND	5.0	100
Strontium (Sr)	ND	100	12000
Tin (Sn)	ND	10	40000
Organic tin	NDA	2.0	2.5
Zinc (Zn)	ND	100	10000

- Remarks: ND = Not detected
 Δ = Due to the screening result exceeded the limit, the test result was directly determined for organic tin.
- If the result of chromium (VI) is below the limit of quantification of EN 71-3, the sample is to be considered passed limit of element migration from drinking equipment.
 - Organic tin test result was expressed as tributyl tin.
 - According to the annex F to EN 71-3: 2019, the content of chromium (III) from the migration solution was calculated through the formula: chromium (III) = total chromium – chromium(VI).
 - The scope of confirmation test for organic tin includes methyl tin, butyl tin, dibutyl tin, tributyl tin, tetrabutyl tin, n-octyl tin, di-n-octyl tin, di-n-propyl tin, diphenyl tin, triphenyl tin, trimethyltin, dimethyltin, tricyclohexyltin and trioctyltin and reports the total value after converted to tributyl tin.



Test Conducted :

10. Colour Fastness Test

As per BS EN 14350:2020 Child care articles - Drinking equipment - Safety requirements and test methods (Physical and Mechanical tests) - Clause 8.8 Colour Fastness

Number of samples tested : Two (2) pieces

Tested samples were conditioned as per Clause 6 prior to testing:

- Immersed in boiling water for 10 min.
- Conditioned in a standard atmosphere of 23 ± 2 °C / $50\pm 5\%$ RH for 40 hours.

Tested sample: (2)

Clause	Requirement	Assessment
8.8	Colour Fastness	P

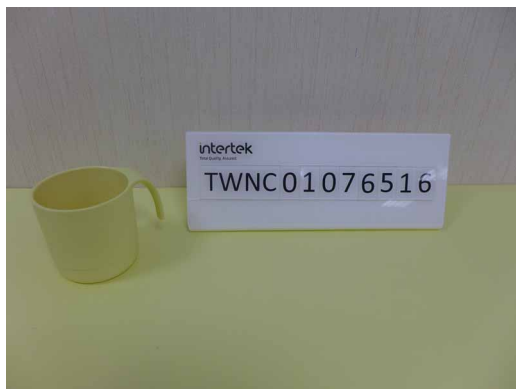
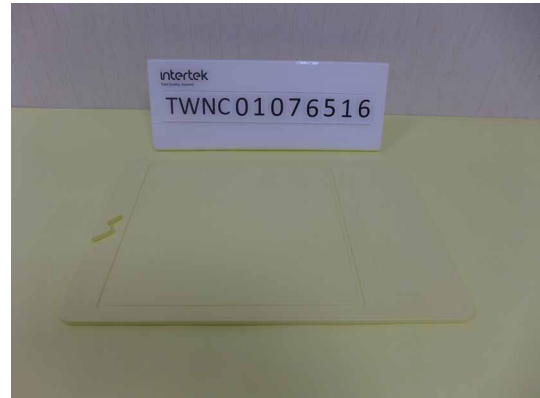
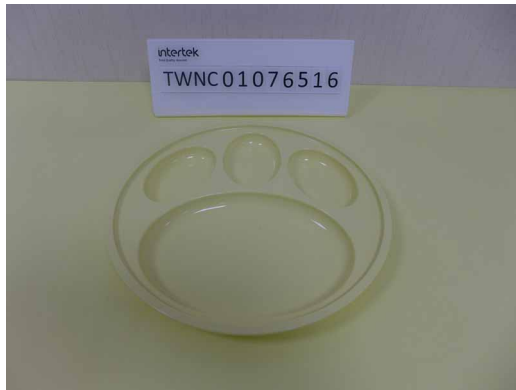
Abbreviation : P = Pass

Tested Components:

- (1) Yellow plastic bowl
 - (2) Yellow plastic cup
-



Sample photo:



End of Report

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