TEST REPORT

Applicant	Guangdong Tianhao New Materials Technology Co.,Ltd
Address	Chuanggu Park,Building A,No.12 Dayuan Street,YaoLe Village,Liaobu Town,Dongguan City,Guangdong Province
Manufacturer	Guangdong Tianhao New Materials Technology Co.,Ltd
Address	Chuanggu Park,Building A,No.12 Dayuan Street,YaoLe Village,Liaobu Town,Dongguan City,Guangdong Province
Sample Name	Color masterbatch
Model	MB-11927
Date of Receipt	Mar. 16, 2026
Date of Test	Mar. 16, 2026 to Mar. 20, 2026
Date of Report	Mar. 20, 2026
Test laboratory	Guangdong KAIXU Testing Technology Co., Ltd.
Test location	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China

Test Conclusion:

Test Requested	Conclusion
As requested by the applicant, refer to attached page(s) for details.	**PASS**

****** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) ******

Signed for and on behalf of KAIXU Test International

GUANGDONG KAIXU TESTING TECHNOLOGY CO., LTD. KTi APPROVAL

Tested by: Cathy Approved by: Martin

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Summary of Test Results:

Test Requested		Conclusion
In accordance with European Commission Directive 1935/2004/EC,(EU) No.10/2011,(EU)No.2020/1245, (EU) 2024/3190,German Food, Food and Commodity Law (LFGB) Sections 30 and 31,French Requirements intended for Food Contact according to DGCCRF Document of Métaux et alliages,Law No.2012-1442 and Italian Official Gazette (G.U.) DMH 21 March1973 on materials and articles that come into contact with food.		
For Material: SAN		
1.1	Sensorial examination odour and taste test	PASS
1.2	Overall Migration Test	PASS
1.3	Migration of Heavy Metals Test	PASS
1.4	Migration of Primary Aromatic Amines Test	PASS
1.5	Specific Migration of Acrylonitrile	PASS
1.6	Remaining Peroxides	PASS
1.7	Detection of Dye migration	PASS
1.8	Volatile Organic Compounds	PASS
1.9	BisphenolA(BPA)content	PASS
1.10	Specific migration of BPA	PASS
1.11	Other harmful bisphenols content (BPB,BPS,BPF,BPAF)	PASS
1.12	Specific Migration of 1,3-butadiene	PASS
1.13	1,3-butadiene Content	PASS
1.14	Polycyclic Aromatic Hydrocarbons(PAHs)	PASS

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Test Material Area and Simulant Liquid Volume

Material No.	Material Area	Simulant Volume
1	1dm^2	150ml

Test Result:

1.1 Sensorial examination odour and taste test

Test Method: Sensorial examination odour and taste test with reference to DIN 10955-2024-01;

Test condition: odour test: 40℃, 1 hours;

Taste test: sunflower oil, 40℃, 1 hour.

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

1.2 Overall Migration Test

Test Method: With reference to EN 13130-1:2004, EN 1186-1:2002, EN 1186-2:2022, EN 1186-3:2022

Stimulant used	Test condition	Test Result (mg/dm^2)			MDL (mg/dm^2)	Limit (mg/dm^2)
		No.1				
		1st	2nd	3rd		
3 % acetic acid	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
10 % ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
20% ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
50 % ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
95% ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
Distilled water	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
Vegetable oil	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10
Isooctane	2 hour at 40℃	N.D.	N.D.	N.D.	2.0	10

Note:

1. mg/dm^2=milligram per square decimeter
2. N.D.= Not Detected(<MDL)
3. MDL = Method Detection Limit

1.3 Migration of Heavy Metals Test

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Test Method: With reference to EN 13130-1:2004, analysis was performed by ICP-MS
Test Condition: 2 hour at 40℃ in 3% Acetic acid

Test Item(s)	Unit	Test Result			MDL	Limit
		No.1				
		1st	2nd	3rd		
Soluble Aluminium (Al)	mg/kg	N.D.	N.D.	N.D.	0.01	1
Soluble Ammonium	mg/kg	N.D.	N.D.	N.D.	0.01	--
Soluble Antimony(Sb)	mg/kg	N.D.	N.D.	N.D.	0.01	0.04
Soluble Arsenic(As)	mg/kg	N.D.	N.D.	N.D.	0.002	0.002
Soluble Barium(Ba)	mg/kg	N.D.	N.D.	N.D.	0.01	1
Soluble Cadmium(Cd)	mg/kg	N.D.	N.D.	N.D.	0.002	0.002
Soluble Calcium(Ca)	mg/kg	N.D.	N.D.	N.D.	0.01	--
Soluble Chromium(Cr)	mg/kg	N.D.	N.D.	N.D.	0.002	0.002
Soluble Cobalt(Co)	mg/kg	N.D.	N.D.	N.D.	0.01	0.05
Soluble Copper(Cu)	mg/kg	N.D.	N.D.	N.D.	0.01	5
Soluble Europium(Eu)	mg/kg	N.D.	N.D.	N.D.	0.01	0.05
Soluble Gadolinium(Gd)	mg/kg	N.D.	N.D.	N.D.	0.01	0.05
Soluble Iron(Fe)	mg/kg	N.D.	N.D.	N.D.	0.01	48
Soluble Lanthanum(La)	mg/kg	N.D.	N.D.	N.D.	0.01	0.05
Soluble Lead(Pb)	mg/kg	N.D.	N.D.	N.D.	0.002	0.002
Soluble Lithium(Li)	mg/kg	N.D.	N.D.	N.D.	0.01	0.6
Soluble Magnesium(Mg)	mg/kg	N.D.	N.D.	N.D.	0.01	--
Soluble Manganese(Mn)	mg/kg	N.D.	N.D.	N.D.	0.01	0.6
Soluble Mercury(Hg)	mg/kg	N.D.	N.D.	N.D.	0.002	0.002
Soluble Nickel(Ni)	mg/kg	N.D.	N.D.	N.D.	0.01	0.02
Soluble Potassium(K)	mg/kg	N.D.	N.D.	N.D.	0.01	--
Soluble Sodium(Na)	mg/kg	N.D.	N.D.	N.D.	0.01	--
Soluble Terbium(Tb)	mg/kg	N.D.	N.D.	N.D.	0.01	0.05
Soluble Zinc(Zn)	mg/kg	N.D.	N.D.	N.D.	0.01	5

Note：
1. mg/kg = ppm
2. N.D. = Not Detected (<MDL)
3. MDL = Method Detection Limit

1.4 Migration of Primary Aromatic Amines Test

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Test Method: With reference to EN 13130-1:2004, analysis was performed by LC-MS
Test Condition: 2 hour at 40℃in 3% Acetic acid

No.	Name	CAS No.	Result(mg/kg)			MDL (mg/kg)	Limit (mg/kg)
			No.1				
			1st	2nd	3rd		
1	4-Aninobiphenyl	92-67-1	N.D.	N.D.	N.D.	0.002	0.002
2	4-Chloro-o-toluidine	95-69-2	N.D.	N.D.	N.D.	0.002	0.002
3	2-Naphthylamine	91-59-8	N.D.	N.D.	N.D.	0.002	0.002
4	o-Aminoazotoluene	97-56-3	N.D.	N.D.	N.D.	0.002	0.002
5	2-Amino-4-nitrotoluene	99-55-8	N.D.	N.D.	N.D.	0.002	0.002
6	p-Chloroaniline	106-47-8	N.D.	N.D.	N.D.	0.002	0.002
7	2,4-Diaminoanisole	615-05-4	N.D.	N.D.	N.D.	0.002	0.002
8	4,4'-Diaminobiphenylmethane	101-77-9	N.D.	N.D.	N.D.	0.002	0.002
9	3,3'-Dichlorobenzidine	91-94-1	N.D.	N.D.	N.D.	0.002	0.002
10	3,3'-Dmethoxybenzidine	119-90-4	N.D.	N.D.	N.D.	0.002	0.002
11	3,3'-Dimethylbenzidine	119-93-7	N.D.	N.D.	N.D.	0.002	0.002
12	3,3'-Dimethyl-4,4-diaminobiphenylmethane	838-88-0	N.D.	N.D.	N.D.	0.002	0.002
13	p-Cresidine	120-71-8	N.D.	N.D.	N.D.	0.002	0.002
14	4,4'-Methylene-bis-（2-chloroaniline）	101-214-4	N.D.	N.D.	N.D.	0.002	0.002
15	4,4'-Oxydianiline	101-80-4	N.D.	N.D.	N.D.	0.002	0.002
16	4,4'-Thiodianiline	139-65-1	N.D.	N.D.	N.D.	0.002	0.002
17	o-Toluidine	95-53-4	N.D.	N.D.	N.D.	0.002	0.002
18	2,4-Toluylendiamine	95-80-7	N.D.	N.D.	N.D.	0.002	0.002
19	2,4,5-Trimethylaniline	137-17-7	N.D.	N.D.	N.D.	0.002	0.002
20	o-Anisidine	90-04-0	N.D.	N.D.	N.D.	0.002	0.002
21	2,4-Xylidine	95-68-1	N.D.	N.D.	N.D.	0.002	0.002
22	2,6-Xylidine	87-62-7	N.D.	N.D.	N.D.	0.002	0.002
23	SUM	--	N.D.	N.D.	N.D.	--	0.01

Note：
1. mg/kg=ppm
2. N.D. = Not Detected (<MDL)
3. MDL = Method Detection Limit
4. Primary aromatic amines ("PAAs") listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council (*) and for which no migration limit is specified in Table 1 of Annex I shall not migrate or shall not otherwise be released from plastic materials and articles into food or food simulant. They shall not be detectable using analytical equipment with a limit of detection of 0.002 mg/kg food or food simulant applied to each individual primary aromatic amine ("PAA"), in accordance with Article 11(4). For PAAs not listed in entry 43 to Appendix 8 of Annex XVII to Regulation (EC) No 1907/2006, but for which no specific migration limit is specified in Annex I, compliance with Article 3 of Regulation (EC) No 1935/2004 shall be verified in accordance with Article 19. The sum of those PAAs shall however not exceed 0.01 mg/kg in food or food simulant.

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1.5 Specific Migration of Acrylonitrile

Method: Refer to EN 13130-1:2004, was analyzed by GC-MS.

Test Item	Test condition	Unit	Limit	MDL	Result			Conclusion
					No.1			
					lst	2nd	3rd	
Acrylonitrile	40℃, 2hours	mg/kg	0.01	0.01	N.D.	N.D.	N.D.	Pass

The Permissible Limit were quote from Regulation (EU) No 10/2011.

1.6 Remaining Peroxides

Test method：According to the recommendation of the BfR(German Institute for Risk Assessment) Part VI

Testing Material		No.1	Detection Limit	Limit
Parameter	Unit	Test result		
Peroxides	%(w/w)	N.D.	0.01	Not detectable

Note: - %(w/w) = percentage of weight by weight
- N.D.= Not Detected
- According to the recommendation of the BfR(German Institute for Risk Assessment) Part VI "Styrene Copolymers and Graft Polymers, and Mixtures of Polystyrene with other Polymers (Peroxides)" serves as basis for the evaluation of the test results. The finished products must not test positively for peroxides.

1.7 Detection of Dye migration

Test method:Test method and limit according to Italian Ministerial Decree 21/3/1973,Annex IV -section VI.

Testing Material		No.1	Limit
Parameter	Unit	Test result	
Distilled water	%	99	⩾95
3% Acetic acid	%	99	⩾95
10% Ethanol	%	99	⩾95
Sunflower oil	%	99	⩾95

Note:- % = percentage of optical transmission
- ⩾= greater than or equal to

1.8 Volatile Organic Compounds

Test method: According to the recommendation of the BfR(German Institute for Risk Assessment) Part VI

Test condition：24 hours, 90℃

Testing Material		No.1	Detection Limit	Limit
Parameter	Unit	Test result		
Volatile Organic Compounds	mg/dm^2	5.58	0.01	15

Note: - mg/dm^2 = milligram per square decimetre

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-℃ = degree Celsius

- According to the recommendation of the BfR(German Institute for Risk Assessment) Part VI "Styrene Copolymers and Graft Polymers, and Mixtures of polystyrene with other polymers" serves as basis for the evaluation of the test results. The total emission of volatile organic compounds must not exceed 15mg/dm^2.

1.9 BisphenolA(BPA)content

Test Method: With reference to CEN/TS 13130-13:2005,analysis was perfommed by LC-MS-MS.
Limit: Not detectable -according to Regulation (EU) No 10/2011 &(EU) 2024/3190 and its amendments.& French Law No.2012-1442

Test Item	Unit	MDL	Limit	Result
				No.1
Bisphenol A (BPA)	mg/kg	0.001	0.001	N.D.

Note:
1.mg/kg=ppm
2.MDL=Method Detection Limit
3. N.D.=Not Detection(<MDL)

1.10 Specific migration of BPA

Test Method: Regulation (EU)10/2011 and its amendments Regulation (EU) 2024/3190, With reference to EN 13130-1:2004, EN 1186-1:2002, EN 1186-3:2022, EN1186-14:2002. analysis was performed by LC-MS

Simulant used	Test condition	Result(mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		No.1				
		1st	2nd	3rd		
50 % ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	0.001	0.001
3 % acetic acid	2 hour at 40℃	N.D.	N.D.	N.D.	0.001	0.001
10 % ethanol	2 hour at 40℃	N.D.	N.D.	N.D.	0.001	0.001
Vegetable oil	2 hour at 40℃	N.D.	N.D.	N.D.	0.001	0.001

Note：
1. mg/kg=ppm
2. N.D. = Not Detected (<MDL)
3. MDL = Method Detection Limit

1.11 Other harmful bisphenols content (BPB,BPS,BPF,BPAF)

Test method: Extraction with organic solvent, analysis by LC-MS-MS.

Limit according to the Regulation(EU) No 10/2011 and its amendments.

Testing Material		No.1	Detection Limit	Limit
Parameter	Unit	Test result		
Bisphenol B	mg/kg	N.D.	0.1	Not detectable
Bisphenol S	mg/kg	N.D.	0.1	Not detectable
Bisphenol F	mg/kg	N.D.	0.1	Not detectable
Bisphenol AF	mg/kg	N.D.	0.1	Not detectable

Note: - 1 mg/kg = 1 ppm=0.0001%
- N.D.= Not Detected

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1.12 Specific Migration of 1,3-butadiene
Method: Refer to EN 13130-1:2004, was analyzed by GC-MS.

Test Item	Test condition	Unit	Limit	MDL	Result			Conclusion
					No.1			
					lst	2nd	3rd	
1,3-butadiene	40℃, 2hours	mg/kg	0.1	0.1	N.D.	N.D.	N.D.	Pass

The Permissible Limit were quote from Regulation (EU) No 10/2011.

1.13 1,3-butadiene Content
Method: Refer to EN 13130-1:2004, was analyzed by GC-MS.

Test Item	Unit	Limit	MDL	Result(No.1)	Conclusion
1,3-butadiene	mg/kg	0.1	1	N.D.	Pass

The Permissible Limit were quote from Regulation (EU) No 10/2011.

1.14 PAHS
Test Method: Refer to AfPS GS 2019:01 PAK, was analyzed by GC-MS.

Compound	CAS No.	Unit	MDL	Result (No.1)
(1) Naphthalene	91-20-3	mg/kg	0.2	N.D.
(2) Phenanthrene	85-01-8	mg/kg	0.2	N.D.
(3) Anthracene	120-12-7	mg/kg	0.2	N.D.
(4) Fluoranthene	206-44-0	mg/kg	0.2	N.D.
(5) Pyrene	129-00-0	mg/kg	0.2	N.D.
(6)Benzo[a]anthracene	56-55-3	mg/kg	0.2	N.D.
(7)Chrysene	218-01-9	mg/kg	0.2	N.D.
(8)Benzo[b]fluoranthene	205-99-2	mg/kg	0.2	N.D.
(9)Benzo[k]fluoranthene	207-08-9	mg/kg	0.2	N.D.
(10) Benzo[e]pyrene	192-97-2	mg/kg	0.2	N.D.
(11).Benzo[a]pyrene	50-32-8	mg/kg	0.2	N.D.
(12)Indeno[1,2,3-cd]pyrene	193-39-5	mg/kg	0.2	N.D.
(13)Benzo[g,h,i]perylene	191-24-2	mg/kg	0.2	N.D.
(14)Benzo[j]fluoranthen	205-82-3	mg/kg	0.2	N.D.
(15)Dibenzo[a,h]anthracene	53-70-3	mg/kg	0.2	N.D.
Sum of PAHs(No.2-No.5)	--	mg/kg	--	N.D.
Sum of PAHs(No.1-No.15)	--	mg/kg	--	N.D.

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

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AFPS GS 2019:01 PAK:Restraining maximum values for products

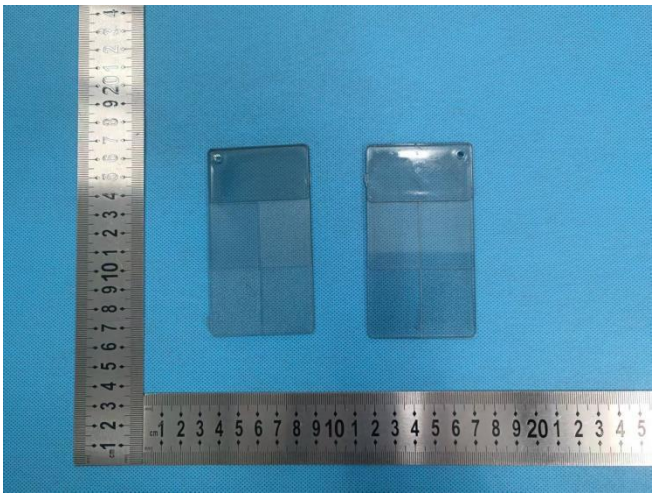
Parameter	Category 1	Category 2		Category3	
	Materials intended for entry, toys in the range of 200 / 48 / EC, products for children under 3 years old who can foresee long-term contact with skin (more than 30s)	Materials not included in Category 1 that are expected to be in contact with the skin for a long time (more than 30s), or repeatedly in contact with the skin for a short time		Materials not included in categories 1 and 2 that are expected to be in short-term contact with the skin (not more than 30s)	
		Children's products	Other consumer products	Children's products	Other consumer 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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Sample Description:

Material No.	Description	Material
1	Transparent plastic	SAN

Tested sample photos



-------THE END OF REPORT-------

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