

Test Report

Number: SHAH01439258

Applicant: POLYCONCEPT GBS
4/F., HONGQIAO RONGGUANG BLDG.,
11 CHANGSHUN ROAD SHANGHAI,
200051, PR CHINA
Attn: Sonia HE

Date: Mar 24, 2022

Sample Description:

Item Name : Standard Mug (PFM186)
Item No. : 21001400 Black/21001401 White/21001403 Blue/21001404 Red/21001405
Aqua/21001408 Yellow
Vendor : SPS
Goods Exported To : Europe
Country Of Origin : UK

Tests Conducted:

As requested by the applicant, for details refer to attached page(s).

Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Tested components of submitted sample	European Commission Regulation No. 10/2011, amendment No. 2020/1245 and other amendments and Regulation No. 1935/2004 - Overall migration	Pass
	European commission regulation No. 10/2011 annex I, amendment No. 2020/1245 and other amendments and Regulation 1935/2004 - specific migration of Bisphenol A	Pass
	European Commission Regulation No. 10/2011 Annex II and Amendment No. 2016/1416 and No. 2017/752 and No. 2020/1245 and Regulation 1935/2004 on specific migration of heavy metal content	Pass
	European Commission Regulation No. 10/2011 Annex I and II and Amendment No. 2020/1245 and Regulation 1935/2004 on specific migration of primary aromatic amines	Pass

To be continued

Authorized By:
For Intertek Testing Services Ltd., Shanghai



Bill Zhang
General Manager



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Conclusion:

<u>Tested Sample</u>	<u>Standard</u>	<u>Result</u>
Tested components of submitted sample	Applicant's requirement on specific migration of polycyclic aromatic hydrocarbons (PAHs) content	Pass
	European commission regulation No. 10/2011 annex I, amendment No. 2020/1245 and other amendments and Regulation 1935/2004 on specific migration of phthalate	Pass
	Sensory Evaluation	Pass
	Client's requirement on Bisphenol-A content	Pass
	Europe commission regulation No. 10/2011 and regulation 1935/2004 on phthalate content.	Pass

To be continued

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Tests Conducted

1 Overall Migration Test for Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and its amendments on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant	
Test No.	Time and Temperature
OM3	2 hours at 70 °C

II. Test Results:

Tested Component	Result in mg/dm ²					
	3% (w/v) acetic acid			50% (v/v) ethanol		
	1 st	2 nd	3 rd	1 st	2 nd	3 rd
(1)	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
(2)	3.1	<3.0	<3.0	3.2	<3.0	<3.0
(3)	3.1	<3.0	<3.0	3.4	<3.0	<3.0
(4)	<3.0	<3.0	<3.0	3.6	3.6	3.6
(5)	3.3	<3.0	<3.0	3.3	<3.0	<3.0
(6)	3.4	<3.0	<3.0	3.5	<3.0	<3.0
Limit in mg/dm ²	10			10		

Requirement:

Result of 3rd migration < SML, and

Result of 1st migration ≥ 2nd migration ≥ 3rd migration after consideration of result uncertainty.

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remark: As per client's request, the above condition and food simulant were used for the test.

Tested Components: See component list in the last section of this report.

Date Sample Received: Mar.7, 2022

Testing Period: Mar.7, 2022 to Mar.14, 2022

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Tests Conducted

2 Specific Migration of Bisphenol A for Plastic Food Contacting Materials/Articles

As per Commission Regulation (EU) No. 10/2011 and its amendments (including amendment No. 2018/213 and amendment No. 2020/1245) on plastic materials and articles intended to come into contact with food. And followed by Liquid Chromatography-Mass Spectrometry (LC-MS) analysis.

I . Test Condition:

Aqueous food simulant:

Temperature: 70 °C

Time: 2 hours

II . Test Results of Bisphenol A (CAS No. 80-05-7):

Tested Component	Result in mg/kg		
	3% (w/v) acetic acid		
	1 st	2 nd	3 rd
(1)	ND	ND	ND
(2)	ND	ND	ND
(3)	ND	ND	ND
(4)	ND	ND	ND
(5)	ND	ND	ND
(6)	ND	ND	ND
Limit in mg/kg	0.05		

Requirement:

Result of 3rd migration < SML, and

Result of 1st migration $\geq$ 2nd migration $\geq$ 3rd migration after consideration of result uncertainty.

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remark: Report limit=0.01mg/kg

ND=Not detected (less than report limit)

As per client's request, the above condition and food stimulant were used for the test.

Tested Components: See component list in the last section of this report.

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3 Specific Migration of Heavy Metal

As per Commission Regulation (EU) No. 10/2011 and its amendments.

I. Test condition:

Food simulant: 3% (w/v) Acetic acid
Temperature: 70 °C

Time: 2 hours

II. Test result:

Test Component: (1)(2)(3)(4)(5)(6)					
Element	Result (mg/kg)			Detection limit (mg/kg)	Limit (mg/kg)
	1 st migration	2 nd migration	3 rd migration		
Aluminum(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	0.03	0.05
Copper(Cu)	ND	ND	ND	1	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	1	5
Europium(Eu)	ND	ND	ND	0.01	0.05
Gadolinium(Gd)	ND	ND	ND	0.01	0.05
Lanthanum(La)	ND	ND	ND	0.01	0.05
Terbium(Tb)	ND	ND	ND	0.01	0.05
Sum of (Eu, Gd, La, Tb)	ND	ND	ND	0.04	0.05

Requirement:

Result of 3rd migration < SML, and

Result of 1st migration $\geq$ 2nd migration $\geq$ 3rd migration after consideration of result uncertainty.

Result of 1st, 2nd and 3rd migration < SML when SML limit is Not Detected (ND)

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remark: ND = Not detected(less than detection limit)

As per client's request, the above condition and food simulant were used for the test.

Tested Components: See component list in the last section of this report.

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Tests Conducted

4 Specific Migration of Primary Aromatic Amines

With reference to Commission Regulation (EU) No. 10/2011 and its amendments, and JRC Technical Guidelines EUR 24815 EN 2011.

III. Test condition:

Food simulant: 3% (w/v) Acetic acid

Temperature: 70 °C Time: 2 hours

IV. Test Result:

Test Component: (1)(2)(3)(4)(5)(6)							
Test Item	CAS No.	Result (mg/kg)			Detection Limit (mg/kg)	Limit (mg/kg)	
		1 st migration	2 nd migration	3 rd migration			
1	4-Aminodiphenyl	92-67-1	ND	ND	ND	0.002	ND
2	Benzidine	92-87-5	ND	ND	ND	0.002	ND
3	4-Chloro-o-Toluidine	95-69-2	ND	ND	ND	0.002	ND
4	2-Naphthylamine	91-59-8	ND	ND	ND	0.002	ND
5	o-Aminoazotoluene	97-56-3	ND	ND	ND	0.002	ND
6	2-Amino-4-Nitrotoluene	99-55-8	ND	ND	ND	0.002	ND
7	p-Chloroaniline	106-47-8	ND	ND	ND	0.002	ND
8	2,4-Diaminoanisole	615-05-4	ND	ND	ND	0.002	ND
9	4,4'-Diaminodiphenylmethane	101-77-9	ND	ND	ND	0.002	ND
10	3,3'-Dichlorobenzidine	91-94-1	ND	ND	ND	0.002	ND
11	3,3'-Dimethoxybenzidine	119-90-4	ND	ND	ND	0.002	ND
12	3,3'-Dimethylbenzidine	119-93-7	ND	ND	ND	0.002	ND
13	3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	ND	ND	ND	0.002	ND
14	p-Cresidine	120-71-8	ND	ND	ND	0.002	ND
15	4,4'-Methylene-Bis(2-Chloroaniline)	101-14-4	ND	ND	ND	0.002	ND
16	4,4'-Oxydianiline	101-80-4	ND	ND	ND	0.002	ND
17	4,4'-Thiodianiline	139-65-1	ND	ND	ND	0.002	ND
18	o-Toluidine	95-53-4	ND	ND	ND	0.002	ND
19	2,4-Toluylenediamine	95-80-7	ND	ND	ND	0.002	ND
20	2,4,5-Trimethylaniline	137-17-7	ND	ND	ND	0.002	ND
21	o-Anisidine	90-04-0	ND	ND	ND	0.002	ND
22	4-Aminoazobenzene	60-09-3	ND	ND	ND	0.002	ND
23	m-Phenylenediamine	108-45-2	ND	ND	ND	0.002	ND
24	Benzoguanamin	91-76-9	ND	ND	ND	0.05	5
25	4,4'-Methylenebis(3-chloro-2,6-diethylaniline)	106246-33-7	ND	ND	ND	0.01	0.05
26	Total of other primary aromatic amine	-	ND	ND	ND	0.01	0.01

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Requirement:

Result of 3rd migration < SML, and

Result of 1st migration $\geq$ 2nd migration $\geq$ 3rd migration after consideration of result uncertainty.

Result of 1st, 2nd and 3rd migration < SML when SML limit is Not Detected (ND)

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remark: ND = Not detected (less than detection limit)

Other primary aromatic amines are p-Phenylenediamine, 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, 2-Amino-5-methylbenzoic acid

Tested Components: See component list in the last section of this report.

Date Sample Received: Mar.7, 2022

Testing Period: Mar.7, 2022 to Mar.14, 2022

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Tests Conducted

5 Specific Migration of Polycyclic Aromatic Hydrocarbons (PAHs)

As per commission regulation (EU) No. 10/ 2011 of 14 January 2011 and its amendments on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant:

Temperature: 70 °C

Time: 2 hours

II. Test Results of Tested Component (1)(2)(3)(4)(5)(6):

Compound	Result mg/kg)			Requirement
	50% (v/v) ethanol			
Naphthalene	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND
Benzo[j]fluoranthene	ND	ND	ND	ND
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
Benzo[e]pyrene	ND	ND	ND	ND
Dibenzo[a,h]anthracene	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND

Requirement:

Result of 3rd migration < SML, and

Result of 1st migration ≥ 2nd migration ≥ 3rd migration after consideration of result uncertainty.

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remarks: ND = Not Detected

Detection Limit = 0.01 mg/kg

Tested Components: See component list in the last section of this report.

Date Sample Received: Mar.7, 2022

Testing Period: Mar.7, 2022 to Mar.14, 2022

To be continued



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Tests Conducted

6 Specific Migration of Phthalates Test for Plastic Food Contacting Materials/Articles

As per commission regulation (EU) No. 10/ 2011 of 14 January 2011 and its amendments on plastic materials and articles intended to come into contact with food.

I. Test Condition:

Aqueous food simulant:

Temperature: 70 °C

Time: 2 hours

II. Test Results:

Butyl Benzy Phthalate (BBP)(CAS No.85-68-7):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	<1	<1	<1
(2)	<1	<1	<1
(3)	<1	<1	<1
(4)	<1	<1	<1
(5)	<1	<1	<1
(6)	<1	<1	<1
Limit in mg/kg	30		

Bis (2-Ethylhexyl) Phthalate (DEHP)(CAS No.117-81-7):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	<1	<1	<1
(2)	<1	<1	<1
(3)	<1	<1	<1
(4)	<1	<1	<1
(5)	<1	<1	<1
(6)	<1	<1	<1
Limit in mg/kg	1.5		

To be continued



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Tests Conducted

Dibutyl Phthalate (DBP):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	<0.2	<0.2	<0.2
(2)	<0.2	<0.2	<0.2
(3)	<0.2	<0.2	<0.2
(4)	<0.2	<0.2	<0.2
(5)	<0.2	<0.2	<0.2
(6)	<0.2	<0.2	<0.2
Limit in mg/kg	0.3		

Di-(Iso-Nonyl) Phthalate (DINP)(CAS No. 84-74-2) and Di-(Iso-Decyl) Phthalate (DIDP)(CAS No.26761-40-0):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	<1	<1	<1
(2)	<1	<1	<1
(3)	<1	<1	<1
(4)	<1	<1	<1
(5)	<1	<1	<1
(6)	<1	<1	<1
Limit in mg/kg	9		

Diallyl Phthalate (DAP)(CAS No. 131-17-9):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	ND	ND	ND
(2)	ND	ND	ND
(3)	ND	ND	ND
(4)	ND	ND	ND
(5)	ND	ND	ND
(6)	ND	ND	ND
Limit in mg/kg	ND		

Bis(2-ethylhexyl) adipate (DEHA)(CAS No. 103-23-1):

Tested Component	Result in mg/kg		
	50% (v/v) ethanol		
	1 st	2 nd	3 rd
(1)	<0.5	<0.5	<0.5
(2)	<0.5	<0.5	<0.5
(3)	<0.5	<0.5	<0.5
(4)	<0.5	<0.5	<0.5
(5)	<0.5	<0.5	<0.5
(6)	<0.5	<0.5	<0.5
Limit in mg/kg	18		

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Requirement:

Result of 3rd migration < SML, and

Result of 1st migration $\geq$ 2nd migration $\geq$ 3rd migration after consideration of result uncertainty.

Ratio of food contact surface area to volume of component (1)~(6) used to establish the compliance of material or article = 2.2 dm² : 360 mL.

Remark: ND = Not Detected

Detection Limit of DAP=0.01mg/kg

As per client's request, the above condition and food simulant were used for the test.

Tested Components: See component list in the last section of this report.

Date Sample Received: Mar.7, 2022

Testing Period: Mar.7, 2022 to Mar.14, 2022

7 Sensory Evaluation

With reference to §64 LFGB I00.90-6.

Test procedure:

Sample was thoroughly rinsed with distilled water and then filled with distilled water to capacity. Filled sample was kept at ambient temperature 70 °C for 2 hours. Off-odor and off-taste was evaluated with 6 panelists using control sample of distilled water.

	<u>Result</u>						<u>Limit</u>
	(7)	(8)	(9)	(10)	(11)	(12)	
Appearance	Clear,	Clear,	Clear,	Clear,	Clear,	Clear,	Clear,
	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless	Colourless
Odor	0	0	0	0	0	0	2.5
Taste	0	0	0	0	0	0	2.5

Assessment:

Intensity scale:

0 = No perceptible odour / taste

1 = Odour / taste just perceptible (but still difficult to define)

2 = Slight odour / taste

3 = Distinct odour / taste

4 = Strong odour / taste

Tested Components: See component list in the last section of this report.

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Tests Conducted

8 Bisphenol-A Content

By solvent extraction and followed by Liquid Chromatography-Mass Spectrometry (LC-MS/MS) analysis.

<u>Tested Components</u>	<u>Result (mg/kg)</u>	<u>Client's requirement (mg/kg)</u>
(1)	ND	0.1
(2)	ND	0.1
(3)	ND	0.1
(4)	ND	0.1
(5)	ND	0.1
(6)	ND	0.1

Remark: ND = Not Detected
Detection Limit = 0.1mg/kg

Tested Component(s): See component list in the last section of this report.

Testing Summary:

Extraction solvent: Tetrahydrofuran
Ultrasonic bath extraction temperature: 70°C ± 2°C
Extraction time: 30minutes

Date Sample Received: Mar.7, 2022
Testing Period: Mar.7, 2022 to Mar.14, 2022

9 Phthalate Content

By solvent extraction and Gas Chromatography-Mass Spectrometry (GC-MS) analysis.

	<u>Result (% w/w)</u>		<u>Limit (% w/w) (max.)</u>
	(1+2+3)	(4+5+6)	
Dibutyl Phthalate (DBP)	<0.01	<0.01	0.05
Diethyl Hexyl Phthalate (DEHP)	<0.01	<0.01	0.1
Benzyl Butyl Phthalate (BBP)	<0.01	<0.01	0.1
Di-(iso-nonyl) Phthalate (DINP)	<0.01	<0.01	0.1
Di-(iso-decyl) Phthalate (DIDP)	<0.01	<0.01	0.1

Remark: Detection Limit = 0.01% (w/w)

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Tests Conducted

Tested Components: See component list in the last section of this report.



Sample as received

Date Sample Received: Mar.7, 2022

Testing Period: Mar.7, 2022 to Mar.10, 2022

Components List:

- (1) Yellow plastic
- (2) Blue plastic
- (3) Aqua plastic
- (4) White plastic
- (5) Black plastic
- (6) Red plastic
- (7) Whole sample (yellow)
- (8) Whole sample (blue)
- (9) Whole sample (aqua)
- (10) Whole sample (white)
- (11) Whole sample (black)
- (12) Whole sample (red)

End of report

The statements of conformity reported have considered the decision rule agreed, namely that Intertek have taken account of measurement uncertainty as calculated by Intertek, and applied according to ILAC-G8/09:2019 (Non-binary acceptance based on guard band $w = U$) except designation from the customer, regulation or test specification. This decision rule only applies to the numeric test results.

The sample(s) and sample information hereto are provided by the client who shall be solely responsible for the authenticity and integrity thereof. The results shown in this report relate only to the sample(s) received and tested. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct. This report shall not be reproduced unless with prior written approval from Intertek Testing Services Shanghai Ltd.

