

TEST REPORT

Report No.: DPHTL2505283075E

Date: Jun 9,2025

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Applicant: Mid Ocean Brands B.V.**Address:** Unit 711-716, 7/F., Tower A, 83 King Lam Street Cheung Sha Wan, Kowloon, Hong Kong

The following sample(s) and sample information was/were submitted and identified by client as:

Sample Name: Recycled glass mug**Model:** MO2091**Vendor code :** 107978**Receiving Date:** May 28,2025**Test Period:** From May 28,2025 to Jun 6,2025**Add Information:** -**Test Summary:**

#	Test item(s)	Result
1	Item 50 of Annex XVII of REACH Regulation (EC) 1907/2006 & amendment (EU) No 1272/2013 Polycyclic-aromatic hydrocarbons (PAHs) content	PASS
2	Item 23 of Annex XVII of REACH Regulation (EC) 1907/2006 Cadmium content	PASS
3	Item 51&52 of Annex XVII of REACH Regulation (EC) 1907/2006. Phthalate content (DIBP、DEHP、DBP、BBP、DINP、DIDP、DNOP)	PASS
4	Item 63 of Annex XVII of REACH Regulation (EC) 1907/2006 Total Lead content	PASS
5	Dishwasher safe test (complied with the specification of dishwasher safe test according to PAS 54:2003)-BS EN 12875-1:2005	PASS
6	Microwave safe test-BS EN 15284:2007	PASS

*****Please refer to the following page for detailed results*****

Authorized Signatory

Mark Mai
(Technical Director)

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#	Test Item(s)	Conclusion
Regulation (EC) No 1935/2004, and the Commission Regulation AP(2004)2		
7	Specific Migration of Formaldehyde	PASS
8	Pentachlorophenol (PCP) content	PASS
Regulation (EC) No 1935/2004,the Commission Regulation (EU) 2024/3190 and Council of Europe Resolution AP (2004) 5- For Silicone Material		
9	Overall migration	PASS
10	Bisphenol A Contents	PASS
11	Specific migration of Bisphenol A (BPA)	PASS
French Arrêté du 25 Novembre 1992 and French Décret 2007-766 with amendments - For Silicone Material		
12	Overall migration	PASS
13	Specific migration of Bisphenol A (BPA)	PASS
14	Bisphenol A Contents	PASS
15	Specific migration of Organotin (as Tin)	PASS
16	Peroxide Value	PASS
17	Volatile organic matter	PASS
Regulation (EC) No 1935/2004, the Council of Europe Directive 84/500/EEC and its amendment 2005/31/EC		
18	Extractable Lead, Cadmium For Glass Material	PASS

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Result:

1. Polycyclic-aromatic hydrocarbons (PAHs) content - Item 50 of Annex XVII of REACH Regulation (EC) 1907/2006 & amendment (EU) No 1272/2013
AfPS-GS-2019-01:PAK, determined by GC-MS

Test Item(s)		Results		Limit (mg/kg)	MDL (mg/kg)
		category I ^{*1}			
		1	3		
1	Benz[a]anthracene(BaA) CAS#56-55-3	N.D.	N.D.	1	0.2
2	Chrysene(CHR) CAS#218-01-9	N.D.	N.D.	1	0.2
3	Benz[b]fluoranthene(BbFA) CAS#205-99-2	N.D.	N.D.	1	0.2
4	Benz[k]fluoranthene(BkFA) CAS#207-08-9	N.D.	N.D.	1	0.2
5	Benz[j]fluoranthene(BjFA) CAS#205-82-3	N.D.	N.D.	1	0.2
6	Benzo[a]pyrene(BaP) CAS#50-32-8	N.D.	N.D.	1	0.2
7	Benzo[e]pyrene(BeP) CAS#192-97-2	N.D.	N.D.	1	0.2
8	Dibenz [a,h]anthracene (DBahA) CAS#53-70-3	N.D.	N.D.	1	0.2
-	Conclusion	PASS	PASS	-	-

Remark: (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

1: Result category

Category I: Articles come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use.

Category II : Toys, including activity toys, and childcare articles, that come into direct as well as prolonged or short-term repetitive contact with the human skin or the oral cavity, under normal or reasonably foreseeable conditions of use.

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2. Cadmium content - Item 23 of Annex XVII of REACH Regulation (EC) 1907/2006 IEC 62321-5:2013, determined by AAS

Test item(s)		Result	Limit (mg/kg)	MDL (mg/kg)
		1		
1	Cadmium (Cd) CAS#7440-43-9	N.D.	1000	10
-	Conclusion	PASS	-	-

Test item(s)		Result	Limit (mg/kg)	MDL (mg/kg)
		3		
1	Cadmium (Cd) CAS#7440-43-9	N.D.	100	10
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

3. Phthalate content (DIBP、DEHP、DBP、BBP、DINP、DIDP、DNOP) - Item 51& 52 of Annex XVII of REACH Regulation (EC) 1907/2006 EN 14372:2004 & IEC 62321-8:2017, determined by GC-MS

Test item(s)			Result		Limit (%)	MDL (%)
			1	3		
1	DBP	Dibutyl Phthalate CAS# 84-74-2	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutyl Phthalate CAS# 85-68-7	N.D.	N.D.	0.1	0.005
3	DEHP	Bis-(2-ethylhexyl)Phthalate CAS# 117-81-7	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	0.1	0.005
5	DNOP	Di-n-octyl phthalate CAS# 117-84-0	N.D.	N.D.	-	0.005
6	DINP	Di-iso-nonyl phthalate CAS# 28553-12-0/68515-48-0	N.D.	N.D.	-	0.010
7	DIDP	Diisodecyl phthalate CAS# 26761-40-0	N.D.	N.D.	-	0.010
-	Sum of 1, 2, 3 & 4		N.D.	N.D.	0.1	-

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-	Sum of 5, 6 & 7	N.D.	N.D.	0.1	-
-	Conclusion	PASS	PASS	-	-

Remark(s): (a) MDL: Method detected limit
(b) N.D.: Not detected (result is less than MDL)

4. Total Lead content -Item 63 of Annex XVII of REACH Regulation (EC) 1907/2006 IEC 62321-5:2013, determined by AAS

Test item(s)		Result				Limit (mg/kg)	MDL (mg/kg)
		1	2	3	4		
1	Lead(Pb) CAS#7439-92-1	N.D.	N.D.	N.D.	N.D.	500	10
-	Conclusion	PASS	PASS	PASS	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

5. Dishwasher safe test (complied with the specification of dishwasher safe test according to PAS 54:2003) BS EN 12875-1:2005

After 10 cycles	Sample	5A	5B	5C
	Color ¹⁾	0	0	0
	Gloss	0	0	0
	Clouding	0	0	0
	Resistant deposits and iridescent layers ²⁾	0	0	0
	Other aspects	0	0	0

Remark(s): 1).If several colours are present on one article to be inspected, the colour with the greatest change shall be chosen.
2).For the elimination of easily removable deposits.
3).See photo bar for test photos

Note: Pictures are for reference only. Actual colours of the pictures may vary due to lighting and output process.
Evaluation of inspection criteria quoted from BS EN 12875-1:2005.

Classification	Rating
0	No visible change
1	First discernible change
2	Clearly visible change

Requirements quoted from Publicly Available Specification PAS 54: 2003

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Articles that are designated “dishwasher resistant”, “dishwasher proof”, “dishwasher safe” or any other similar description that suggests that the articles can be safely cleaned in a dishwasher shall, either show no visible change compared with untreated tableware (Classification 0) or show very slightly visible change (Classification 1) but shall not show clearly visible change (Classification 2)

6. Microwave safe test BS EN 15284:2007

2.1 Test Standard:

BS EN 15284: 2007 Materials and articles in contact with food stuffs -Test method for the resistance to microwave heating of ceramic, glass, glass-ceramic or plastics cookware

2.2 No. of Specimen:

Test sample description:	Article
Number of Tested Sample(s):	3Pieces
Number of Controlled Sample(s):	1Pieces

2.3 Test Procedure:

With reference to BS EN 15284: 2007 test method.

2.4. Test Requirement:

2.4.1 Visually inspect the test specimen for damage according to the criteria in Table 1.

Table 1——inspection criteria

Material	Cracking	Crazing	Scaling	Color	Melting	Deformation	Suitability for re-use	Charring
Ceramic	+	^a	^b	^c				
Glass, glass-ceramic	+		^b	^c				
Plastics	+			^c	^d	+	^e	+

(+)=to be inspected

^a refers to the glaze

^b refers to on-glaze decoration

^c if several colors are present on one article to be inspected, the color with the greatest change shall be chosen

^d article shall not be too soft to handle

^e article shall be washable and stain resistant

NOTE 1 For the color criterion, an inspector and inspection site that meet the requirements of Clause 4 and 5.2 of EN 12875-2:2001 are required [2]

2.4.2 The maximum surface temperature of handles after the short period heating (6.6) shall not exceed the following limit values:

ceramic, glass-ceramic or glass: 56℃

plastics: 60℃

NOTE 1 These temperatures can be found by reference to a one minute contact time in EN ISO 13732-1 [1].

NOTE 2 As temperatures measured after the long period of heating vary significantly depending on the microwave oven used for testing, no temperature limit values apart from those for handles are given.

2.5. Test Result:

Pass

1) Visually inspect the test specimen: No visible change.

2) The highest surface temperature: 41℃ (after the short period)
98℃ (after the long period)

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Regulation (EC) No 1935/2004, and the Commission Regulation AP(2004)2

7. Specific Migration of Formaldehyde

EN 13130-1:2004 and CEN/TS 13130-23:2005 determined by UV-Vis

Test condition: 3% acetic acid,70°C,2h

Test Item		Result			Limit (mg/kg)	MDL (mg/kg)
		2				
		1 st	2 nd	3 rd		
1	Formaldehyde	0.3	0.2	0.1	15	0.1
	Conclusion	-	-	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

8. Pentachlorophenol (PCP) content

EN/ISO 15320:2011, determined by GC-MS

Compound		Result(s)	Limit (mg/kg)	RL (mg/kg)
		2		
1	Pentachlorophenol(PCP)	N.D.	0.15	0.05
	Conclusion	PASS	-	-

Remark(s): (a) mg/kg = milligram per kilogram
(b) N.D.: Not detected (result is less than RL)

Regulation (EC) No 1935/2004 ,the Commission Regulation (EU) 2024/3190 and Council of Europe Resolution AP (2004) 5- For Silicone Material

9. Overall Migration

EN 1186-1:2002 & EN 1186-3:2022

Test Item		Result	Limit (mg/dm ²)	MDL (mg/dm ²)
		3 ^{-3rd}		
1	3% Acetic acid, 70°C, 2h	N.D.	10	3
2	50% Ethanol, 70°C, 2h	N.D.	10	3
-	Conclusion	PASS	-	-

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Remark(s): (a) mg/dm²: milligram square decimetre
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

10. Bisphenol A Contents

In-house Method, determined by LC-MS/MS

Test Item		Result	Limit (mg/kg)	MDL (mg/kg)
		3		
1	Bisphenol A	N.D.	Prohibit	0.001
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

11. Specific migration of Bisphenol A

DD CEN/TS 13130-13:2005, determined by LC-MS-MS

Test Condition: 3% Acetic acid, 70°C, 2h

Test Item		Result	Limit (mg/kg)	MDL (mg/kg)
		3-3rd		
1	Bisphenol A (BPA)	N.D.	Prohibit	0.01
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

French Arrêté du 25 Novembre 1992 and French Décret 2007-766 with amendments - For Silicone Material

12. Overall Migration for Silicone Materials in Contact with Foodstuffs

EN 1186-1:2002 & EN 1186-3:2022

Test Item(s)		Result	Limit (mg/dm ²)	MDL (mg/dm ²)
		3-3rd		
1	50%Ethanol, 70°C , 2h	N.D.	10	3
2	3%acetic acid , 70°C , 2h	N.D.	10	3
-	Conclusion	PASS	-	-

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Remark(s): (a) mg/dm²: milligram square decimetre
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

13. Specific migration of Bisphenol A DD CEN/TS 13130-13:2005, determined by LC-MS-MS

Test Condition: 3%Acetic acid, 70℃,2h

Test Item(s)		Result	Limit (mg/kg)	MDL (mg/kg)
		3 ^{-3rd}		
1	Bisphenol A (BPA)	N.D.	Prohibit	0.01
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

14. Bisphenol A (BPA) content In-house Method,determined by LC-MS-MS

Test Item(s)		Result	Client's Limit (mg/kg)	MDL (mg/kg)
		3		
1	Bisphenol A	N.D.	Prohibit	0.001
-	Conclusion	PASS	-	-

Remark(s): (a) MDL: Method detected limit
(b) N.D.: Not detected (result is less than MDL)

15. Specific migration of Organotin(as Tin) EN 13130-1:2004, determined by ICP-OES

Test condition: 3% Acetic acid, 70℃, 2h

Test Item(s)		Result	Limit (mg/kg)	MDL (mg/kg)
		3 ^{-3rd}		
1	Organotin(as Sn)	N.D.	0.1	0.01
-	Conclusion	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram
(b) MDL: Method detected limit
(c) N.D.: Not detected (result is less than MDL)

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16. Peroxide Value

Europe pharmacopoeia,9.0 chapter 2.5.5.

Test Item(s)		Result	Requirement
		3	
1	Peroxide Value	Negative	Negative
-	Conclusion	PASS	-

17. Volatile organic matter

French Arrêté du Novembre 1992 Annex III.

Test condition: 200 °C, 4h

Test Item(s)		Result	Limit (%)	MDL (%)
		3		
1	Volatile Compounds	0.27	0.5	0.1
-	Conclusion	PASS	-	-

Remark(s): (a) MDL: Method detected limit

Regulation (EC) No 1935/2004, the Council of Europe Directive 84/500/EEC and its amendment 2005/31/EC

18. Extractable Lead, Cadmium For Glass Material

84/500/EEC&2005/31/EC, determined by AAS

Test Condition: 4% Acetic acid, 22°C, 24h

Test Item(s)		Result(s)	Client' s Limit (mg/L)	MDL (mg/L)
		4		
1	Lead (Pb)	N.D.	4	0.1
2	Cadmium (Cd)	N.D.	0.3	0.01
-	Conclusion	PASS	-	-

Remark(s): (a) mg/dm²: milligram per litre
 (b) MDL: Method detected limit
 (c) N.D.: Not detected (result is less than MDL)
 (d) According to customer requirements to determine.

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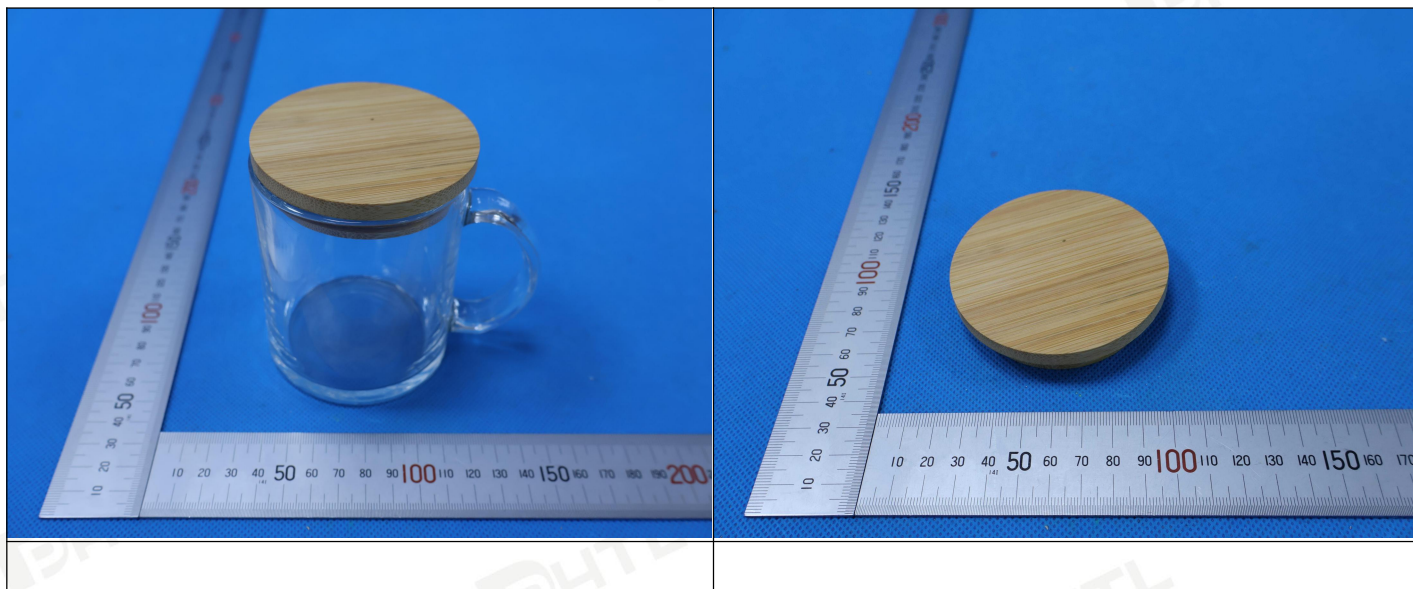
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Material List:

Material #	Sample Description / Position	Client's Material Statement
1	Transparent coating,lid	-
2	Brown bamboo,lid	Bamboo
3	Transparent silicone,seal ring	Silicone
4	Transparent glass,cup	Glass
5	Article	-

Photo(s):

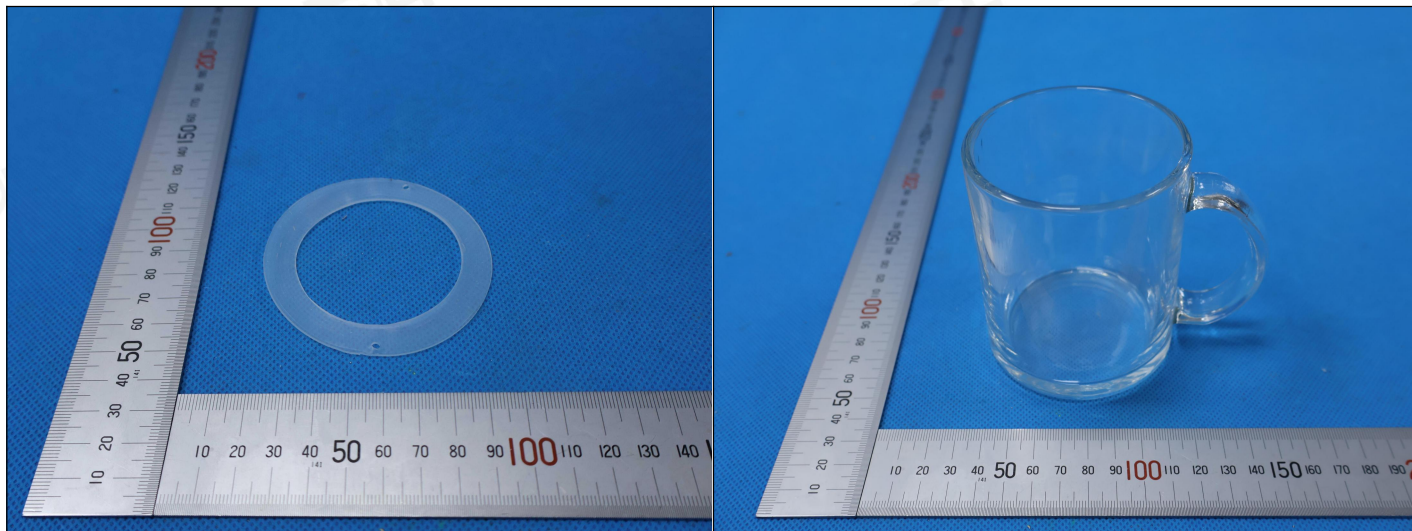


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Test Sample Photo

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