

## Test report

24A-000696



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## Overall result

PASS

Please refer to the following pages for test result summary and notes.

## Client information

Client: Mid Ocean Brands B.V.  
Address: 7/F., Kings Tower, 111 King Lam Street,  
Cheung Sha Wan, Kowloon, Hong Kong



## Sample information

Description: 5 panels baseball cap in RPET polyester  
SKU/style #: MO6831  
Country of origin: -  
Country of distribution: -  
Quantity submitted: 5 pcs + a lot parts  
Labeled age grade: -  
Tested age grade: -  
Materials: polyester

## General information

Sample receipt date: 15-Jan-2024  
Testing period: 16-Jan-2024 to 29-Jan-2024  
Report date: 29-Jan-2024

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## Result summary

At the request of the client, the following test were conducted:

Test(s) conducted	Conclusion
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials	PASS
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials	PASS
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release	PASS
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 50 Polycyclic Aromatic Hydrocarbon (PAH)	PASS
Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 43 Azocolorants in Textiles	PASS
Regulation (EC) No. 1907/2006 REACH Annex XVII as amended, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DIBP, DnOP, DINP, DIDP)	PASS
Colour Fastness to Rubbing	PASS



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## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 63 Lead in Substrate Materials

Test Method: CPSC-CH-E1001-08.3 (Metal) and/or CPSC-CH-E1002-08.3 (Non-Metal)  
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	4	5	6	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	ND	ND	ND	---	500
<b>Conclusion</b>	PASS	PASS	PASS	PASS	---	

**Note:**

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.





## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 23 Cadmium in Substrate Materials

Test Method: ASTM F963-23 Clause 8.3.1  
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+2+3	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Cadmium (Cd)	ND	---	---	---	---	<b>100</b>
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



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## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release

Test Method: EN 12472:2020&EN 1811:2023<sup>1</sup>/ EN 1811:2023<sup>2</sup>  
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

#### Direct and Prolonged Contact with Skin

Specimen No.	4			Limit
	Trial 1	Trial 2	Trial 3	
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm <sup>2</sup> )	1	1	1	
Volume of Test solution Used (mL)	1	1	1	
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>1</sup>	ND	ND	ND	0.5*
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>2</sup>	ND	ND	ND	
<b>Conclusion</b>	PASS			

Specimen No.	5			Limit
	Trial 1	Trial 2	Trial 3	
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm <sup>2</sup> )	1	1	1	
Volume of Test solution Used (mL)	1	1	1	
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>1</sup>	ND	ND	ND	0.5*
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>2</sup>	0.12	0.29	0.26	
<b>Conclusion</b>	PASS			

**Note:**  
 cm<sup>2</sup> = Square centimeters  
 µg · cm<sup>-2</sup> · week<sup>-1</sup> is equivalent to µg/cm<sup>2</sup>/week = Micrograms per square centimeter per week  
 mL = Millilitres  
 ND = Not detected (Reporting Limit = 0.1 µg · cm<sup>-2</sup> · week<sup>-1</sup>)  
 \*According to EN 1811:2023 Section 9.2.2, the compliance shall be evaluated with the combined measurement uncertainty, an article is:  
 Pass and permitted to be placed on the market when the nickel release value is less than or equal to 0.88 µg · cm<sup>-2</sup> · week<sup>-1</sup>;  
 Fail when the nickel release value is greater than 0.88 µg · cm<sup>-2</sup> · week<sup>-1</sup>.





## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 27 Nickel Release

Test Method: EN 12472:2020&EN 1811:2023<sup>1</sup>/ EN 1811:2023<sup>2</sup>  
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

#### Direct and Prolonged Contact with Skin

Specimen No.	6			Limit
	Trial 1	Trial 2	Trial 3	
Test Item	Result	Result	Result	
Size of Tested Sample Area (cm <sup>2</sup> )	1	1	1	
Volume of Test solution Used (mL)	1	1	1	
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>1</sup>	ND	ND	ND	0.5*
Nickel result (µg · cm <sup>-2</sup> · week <sup>-1</sup> ) <sup>2</sup>	ND	ND	ND	
<b>Conclusion</b>	PASS			

**Note:**  
 cm<sup>2</sup> = Square centimeters  
 µg · cm<sup>-2</sup> · week<sup>-1</sup> is equivalent to µg/cm<sup>2</sup>/week = Micrograms per square centimeter per week  
 mL = Millilitres  
 ND = Not detected (Reporting Limit = 0.1 µg · cm<sup>-2</sup> · week<sup>-1</sup>)  
 \*According to EN 1811:2023 Section 9.2.2, the compliance shall be evaluated with the combined measurement uncertainty, an article is:  
 Pass and permitted to be placed on the market when the nickel release value is less than or equal to 0.88 µg · cm<sup>-2</sup> · week<sup>-1</sup>;  
 Fail when the nickel release value is greater than 0.88 µg · cm<sup>-2</sup> · week<sup>-1</sup>.





## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 50 Polycyclic Aromatic Hydrocarbon (PAH)

Test Method: AfPS GS 2019:01  
Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.	3	---	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Benzo [a] pyrene (BaP)	50-32-8	ND	---	---	1
Benzo [e] pyrene (BeP)	192-97-2	ND	---	---	1
Benzo [a] anthracene (BaA)	56-55-3	ND	---	---	1
Chrysene (CHR)	218-01-9	ND	---	---	1
Benzo [b] fluroanthene (BbFA)	205-99-2	ND	---	---	1
Benzo [j] fluroanthene (BjFA)	205-82-3	ND	---	---	1
Benzo [k] fluroanthene (BkFA)	207-08-9	ND	---	---	1
Dibenzo [a,h] anthracene (DBAhA)	53-70-3	ND	---	---	1
<b>Conclusion</b>	PASS	---	---	---	

Note:  
mg/kg = Milligrams per kilogram  
LT = Less than  
ND = Not detected (Reporting Limit = 0.2 mg/kg)





## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII, Item 43 Azocolorants in Textiles

Test Method: EN ISO 14362-1:2017, EN ISO 14362-3:2017  
Analytical Method: Gas Chromatography with Mass Spectrometry, Liquid Chromatography with Diode Array Detection / Liquid Chromatography with Mass Spectrometry

Specimen No.		1+2	---	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
4-aminobiphenyl	92-67-1	ND	---	---	---	30
Benzidine	92-87-5	ND	---	---	---	30
4-chloro-o-toluidine	95-69-2	ND	---	---	---	30
2-naphtylamine	91-59-8	ND	---	---	---	30
o-Aminoazotoluene	97-56-3	ND	---	---	---	30
5-nitro-o-toluidine	99-55-8	ND	---	---	---	30
4-chloroaniline	106-47-8	ND	---	---	---	30
2,4-diaminoanisole	615-05-4	ND	---	---	---	30
4,4'-methylenedianiline	101-77-9	ND	---	---	---	30
3,3'-dichlorobenzidine	91-94-1	ND	---	---	---	30
o-dianisidine	119-90-4	ND	---	---	---	30
3,3'-dimethylbenzidine	119-93-7	ND	---	---	---	30
4,4'-methylenedi-o-toluidine	838-88-0	ND	---	---	---	30
p-cresidine	120-71-8	ND	---	---	---	30
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4	ND	---	---	---	30
4,4'-oxydianiline	101-80-4	ND	---	---	---	30
4,4'-thiodianiline	139-65-1	ND	---	---	---	30
o-toluidine	95-53-4	ND	---	---	---	30
2,4-diaminotoluene	95-80-7	ND	---	---	---	30
2,4,5-trimethylaniline	137-17-7	ND	---	---	---	30
2-methoxyaniline	90-04-0	ND	---	---	---	30
4-aminoazobenzene	60-09-3	ND	---	---	---	30
<b>Conclusion</b>		PASS	---	---	---	

**Note:**

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 5 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

**Remark:**

In the case of levels per amine component less than or equal to 30 mg/kg, according to the analysis as carried out, azo colorants which can release one or more of certain listed amines by cleavage of their azo group/s were not detected in the commodity submitted.



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## Detailed results

### Regulation (EC) No. 1907/2006 REACH Annex XVII as amended, Item 51 and 52 Phthalates – Mouthable (DBP, BBP, DEHP, DIBP, DnOP, DINP, DIDP)

Test Method: CPSC-CH-C1001-09.4  
Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		3	---	---	Limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	---	---	<b>1000</b>
Benzyl butyl phthalate (BBP)	85-68-7	ND	---	---	<b>1000</b>
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	---	---	<b>1000</b>
Diisobutyl phthalate (DIBP)	84-69-5	ND	---	---	<b>1000</b>
Sum of DBP, BBP, DEHP, DIBP		ND	---	---	<b>1000</b>
Di-n-octyl phthalate (DnOP)	117-84-0	ND	---	---	
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	---	---	
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	---	---	
Sum of DnOP, DINP, DIDP		ND	---	---	<b>1000</b>
<b>Conclusion</b>		PASS	---	---	

**Note:**

mg/kg (Milligrams per kilogram) = ppm (Parts per million) = 0.0001 % w/w (Percent by weight)

LT = Less than

ND = Not detected (Reporting Limit = 150 mg/kg)



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## Detailed results

### Colour Fastness to Rubbing

Test Method: ISO 105-X12: 2016, Size of rubbing finger: 16mm dia.

Specimen No.	7-Body	7-Sweetband	---	---	---	Client's requirement
Items	Result (Grade)	Result (Grade)	Result (Grade)	Result (Grade)	Result (Grade)	
Dry staining	4-5	4-5	---	---	---	Min. 2-3
Wet staining	4	3	---	---	---	Min. 2-3
Conclusion	PASS	PASS	---	---	---	-

Remark: Grey Scale rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.





## Specimen description

Specimen #	Specimen description	Location
1	Black textile	Main body
2	Black textile	Sweatband
3	White textile with glue	Front surround lining
4	Silvery metal	Main body of buckle
5	Silvery metal	Oval eyelet
6	Silvery metal	Top button base
7	Black cap	Finished product



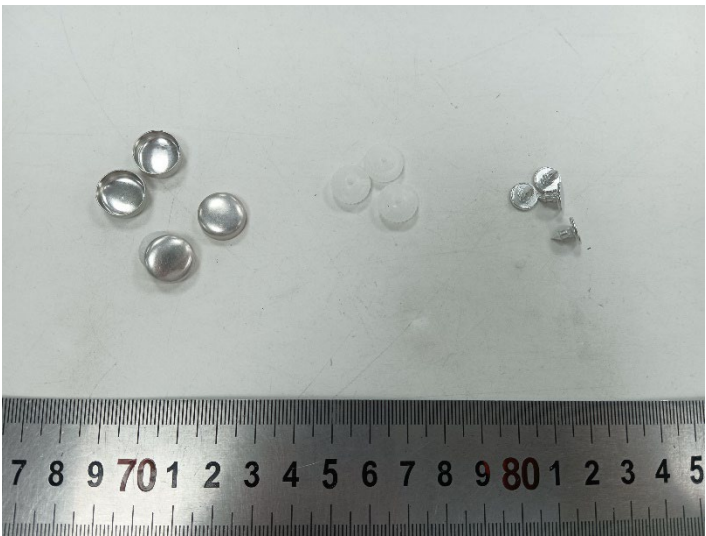
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## Pictures

### Sample photo:



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## Pictures

### Product reference photo:



The photo was provided by the client.

End of the report

The test result(s) and conclusion(s) in this report relate only to the sample(s) as received and the method /regulation section(s) tested as described herein. If it is not further specified in the report, the decision rule for stating conformity is based on the QIMA decision rule. (<https://www.qima.com/conditions-of-service#decisionRule>). This test report may not be reproduced in whole or in part, without the written approval of QIMA (Hangzhou) Testing Co., Ltd.



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