

TEST REPORT

<u>Applicant</u>	: Mid Ocean Hong Kong Ltd.
<u>Address</u>	: 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
<u>Sample description</u>	: MO2497 Polyester wristband keyring
<u>Item no.</u>	: MO2497
<u>Vendor code.</u>	: 111034
<u>Sample received date</u>	: 23-Sep-2024
<u>Further information date</u>	: 09-Oct-2024
<u>Turn around time</u>	: 23-Sep-2024 To 10-Oct-2024
<u>Revised date</u>	: 15-Oct-2024

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant

TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Colourfastness to Rubbing	EN ISO 105-X12:2016	Pass
Nickel Release	REACH Annex XVII, Entry 27	Pass
Banned AZO Dyes	REACH Annex XVII, Entry 43	Pass
Total Cadmium Content	REACH Annex XVII, Entry 23	Pass
Polycyclic Aromatic Hydrocarbons (PAHs)	REACH Annex XVII, Entry 50	Pass
Phthalates Content	REACH Annex XVII, Entry 51 & 52	Pass
Total Lead Content	REACH Annex XVII, Entry 63	Pass

Note : This report cancels and supersedes report number EFW524094086-CG-01 issued on Oct 10th, 2024.

Modification description:

1. As per client's request, add requirement of Colourfastness to Rubbing in the revised report.
2. As per client's request, add component No.8 for Total Cadmium Content, Polycyclic Aromatic Hydrocarbons (PAHs), Phthalates Content and Total Lead Content tests in the revised report.

Samples are obtained by express delivery, Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to info.sh@cpt.eurofinscn.com and referring to this report number.



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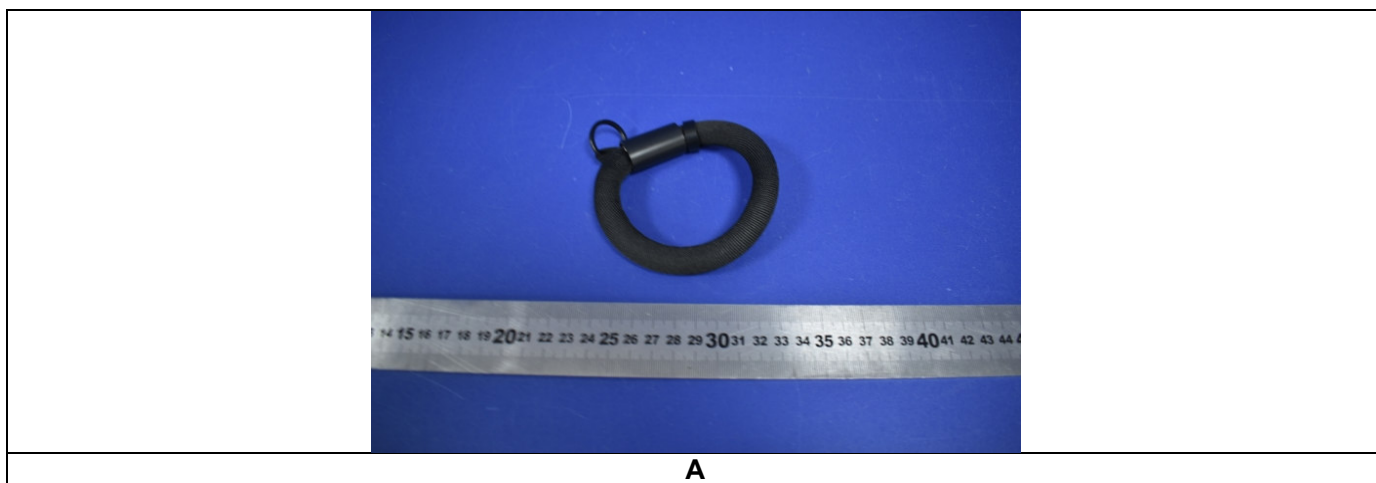
***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins MTS Consumer Product Testing (Shanghai) Co., Ltd.



Vivian Gu
Lab Director SLTH



TEST SAMPLE PHOTO(S)**EFW524094086-CG-01+Rev 1**

TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)

The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

TO BE CONTINUED

COMPONENT LIST

Component No.	Component	Sample No.
1	Black coating on metal	A
2	Black soft plastic (ring)	A
3	Black soft plastic (handle)	A
4	Black fabric (body)	A
5	Silver metal excluding coating (ring)	A
6	Silver metal (fixed wristband)	A
7	Silver metal with black coating (ring)	A
8	White foam	A

TO BE CONTINUED

TEST RESULT

Colourfastness to Rubbing

EN ISO 105-X12:2016.

	(4)	Requirement:
Lengthwise Dry Colour Stain	4-5	Grade: 2-3
Lengthwise Wet Colour Stain	4-5	
Widthwise Dry Colour Stain	4-5	
Widthwise Wet Colour Stain	4-5	

Remark:

Grey Scale for Assessing Colour Change/Staining

Grade 5 negligible or no change or staining

Grade 4 slightly changed or stained

Grade 3 noticeably changed or stained

Grade 2 considerably changed or stained

Grade 1 much changed or stained

TO BE CONTINUED

TEST RESULT

Nickel Release

Test Request: Nickel release as specified in regulation (EC) No 552/2009 amending entry 27 of annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EN 1811:2023

Test Item(s)	Unit	MDL	Test Result (*)	
			6	7
Nickel Release-Trial 1	$\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$	0.1	ND	ND
Nickel Release-Trial 2	$\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$	0.1	ND	ND
Nickel Release-Trial 3	$\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$	0.1	ND	ND

Note:

MDL = method detection limit

ND = not detected, less than MDL.

$\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$ =micrograms per square centimetre per week

Articles with non-nickel coating were tested according to EN 12472:2005+A1:2009, and followed by EN 1181:2023.

Remark:

* For materials and articles coming into direct and prolonged contact with the skin the migration limit is $0.5\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$. According to EN 1811:2023, considering the combined measurement uncertainty of the method, these materials/articles shall be accepted and be permitted to be placed on the market if the measured nickel release value is less or equal to $0.88\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$.

Limit ($\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$)	Test result ($\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{week}^{-1}$)	Conclusion according to EN1811:2023
0.5	≤ 0.88	Pass
	> 0.88	Fail

TO BE CONTINUED

TEST RESULT

Banned AZO Dyes

Test Request: Banned AZO dyes as specified in entry 43 of annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EN ISO 14362-1:2017, sampling procedure and sample preparation according to Annex E4.2 and Annex E4.3.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result
					4
4-methyl-m-phenylenediamine	95-80-7	mg/kg	30	5	ND
2-Naphthylamine	91-59-8	mg/kg	30	5	ND
4,4'-methylenedi-o-toluidine	838-88-0	mg/kg	30	5	ND
Bis-(4-aminophenyl)methane	101-77-9	mg/kg	30	5	ND
4,4'-Oxydianiline	101-80-4	mg/kg	30	5	ND
4,4'-Thiodianiline	139-65-1	mg/kg	30	5	ND
Benzidine	92-87-5	mg/kg	30	5	ND
o-Toluidine	95-53-4	mg/kg	30	5	ND
5-Nitro-o-toluidine (Note 1)	99-55-8	mg/kg	30	5	ND
4-methoxy-m-phenylenediamine	615-05-4	mg/kg	30	5	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	mg/kg	30	5	ND
o-Aminoazotoluene (Note 1)	97-56-3	mg/kg	30	5	ND
2,4,5-Trimethylaniline	137-17-7	mg/kg	30	5	ND
4-Aminobiphenyl	92-67-1	mg/kg	30	5	ND
o-Anisidine	90-04-0	mg/kg	30	5	ND
3,3'-Dichlorobenzidine	91-94-1	mg/kg	30	5	ND
4-Chloroaniline	106-47-8	mg/kg	30	5	ND
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	30	5	ND
n.d.3,3'-Dimethybenzidine	119-93-7	mg/kg	30	5	ND
4-Amino-azobenzene (Note 2)	60-09-3	mg/kg	30	5	ND
2-Methoxy-5-methylaniline	120-71-8	mg/kg	30	5	ND
4-Chloro-2-methylaniline	95-69-2	mg/kg	30	5	ND

Remarks:

Note 1: The CAS-numbers 97-56-3 and 99-55-8 are further reduced to CAS-numbers 95-53-4 and 95-80-7.

Note 2: 4-Amino-azobenzene(CAS No.:60-09-3) is reduced to aniline and 1,4-phenylenediamine.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Total Cadmium Content

Test Request: Total cadmium content as specified in Commission Regulation (EU) 2016/217 amending entry 23 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3050B:1996, EPA 3052:1996, EN 1122:2001 Method B, acid digestion method was used and total cadmium content was determined by ICP-OES.

Test Item(s)	Unit	Limit	MDL	Result
				1
Cadmium (Cd)	mg/kg	1000	5	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

Total Cadmium Content

Test Request: Total cadmium content as specified in Commission Regulation (EU) 2016/217 amending entry 23 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3050B:1996, EPA 3052:1996, EN 1122:2001 Method B, acid digestion method was used and total cadmium content was determined by ICP-OES.

Test Item(s)	Unit	Limit	MDL	Result			
				2+3	4	5+6	8
Cadmium (Cd)	mg/kg	100	5	ND	ND	ND	ND

Remark:

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Polycyclic Aromatic Hydrocarbons (PAHs)

Test Request: Polycyclic Aromatic Hydrocarbons (PAHs) content as specified in entry 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its latest amendment.

Test Method: Solvent extraction and quantification by gas chromatography-mass selective detection (GC-MS) with respect to AfPS GS 2019:01 PAK.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result		
					1	2+3	8
Benzo(a)anthracene	56-55-3	mg/kg	1	0.1	ND	ND	ND
Chrysene	218-01-9	mg/kg	1	0.1	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	1	0.1	ND	ND	ND
Benzo(j)fluoranthene	205-82-3	mg/kg	1	0.1	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	1	0.1	ND	ND	ND
Benzo(a)pyrene	50-32-8	mg/kg	1	0.1	ND	ND	ND
Dibenzo(a,h)anthracene	53-70-3	mg/kg	1	0.1	ND	ND	ND
Benzo(e)pyrene	192-97-2	mg/kg	1	0.1	ND	ND	ND

Remarks:

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Phthalates Content

Test Request: Phthalates content as specified in entry 51&52 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Commission Regulation (EU) 2018/2005.

Test Method: EPA 3550C:2007, EPA 8270E:2018, solvent extraction and quantification by GC-MS.

Test Item(s)	CAS No.	Unit	Limit	MDL	Result		
					1	2+3	8
Di-n-butyl phthalate (DBP)	84-74-2	%	-	0.005	ND	ND	ND
Benzylbutyl phthalate (BBP)	85-68-7	%	-	0.005	ND	ND	ND
Diethylhexyl phthalate (DEHP)	117-81-7	%	-	0.005	ND	0.008	ND
Di-iso-butyl phthalate (DIBP)	84-69-5	%	-	0.005	ND	ND	ND
Sum of DEHP+DBP+BBP+DIBP	-	%	0.1	-	ND	0.008	ND
Di-n-octyl phthalate (DNOP)	117-84-0	%	-	0.005	ND	ND	ND
Diisononyl phthalate (DINP)	28553-12-0	%	-	0.005	ND	ND	ND
Diisodecyl phthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND	ND
Sum of DNOP, DINP, DIDP	-	%	0.1	-	ND	ND	ND

Remarks:

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

MDL = method detection limit

ND = Not detected, less than MDL

"-"= Not Regulated

TO BE CONTINUED

TEST RESULT

Total Lead Content

Test Request: Total lead content as specified in entry 63 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 2015/628.

Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996, acid digestion/ microwave digestion method was used, analysis was performed by ICP-OES.

Test Item(s)	Unit	Limit	MDL	Result			
				1	2+3	4	5+6
Lead (Pb)	mg/kg	500	10	ND	ND	ND	ND

Test Item(s)	Unit	Limit	MDL	Result			
				8			
Lead (Pb)	mg/kg	500	10	ND			

Remark:

According to client's request, tests are combination tests. The experimental results are the total result of mixed samples.

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

END OF THE REPORT