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Applicant: Mid Ocean Brands B.V.

Address: 7/F., Kings Tower, 111 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: Reflective keyring

Model/Style/Item #: MO2104

Receiving Date: 24-May-2023

Test Period: From 24-May-2023 to 30-May-2023

Add Information:

### **Test Summary:**

#	Test Item(s)	Reference Standard/Method	Result
1	Total Lead content - Item 63 of Annex XVII of REACH Regulation (EC) 1907/2006	IEC 62321-5:2013, determined by AAS	PASS
2	Cadmium content - Item 23 of Annex XVII of REACH Regulation (EC) 1907/2006	IEC 62321-5:2013, determined by AAS	PASS
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	PASS
4	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	PASS
5	Azo colorants content - Item 43 of Annex XVII of the REACH Regulation (EC) No 1907/2006 & amendment (EC) No 552/2009 and (EU) No 126/2013	ISO 14362-1:2017 & ISO 14362- 3:2017, determined by GC/MS and HPLC	PASS
6	Colour Fastness to Rubbing	EN ISO 105-X12:2016	SEE RESULT

Signed for and on behalf of STS

Wark Mai

(Technical Director)

e-mail: stsgz@stsapp.com



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### Result:

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

	Compound		Material		Limit	RL
Compound		1	2	3	(mg/kg)	(mg/kg)
1	Lead(Pb) CAS#7439-92-1	N.D.	N.D.	N.D.	500	10
	Conclusion	PASS	PASS	PASS	-	-

Remark(s): (a) mg/kg: milligram per kilogram (b) RL: Report limit

(c) N.D.: Not detected (result is less than RL)

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

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

Remark(s): (a) mg/kg: milligram per kilogram

(b) RL: Report limit

(c) N.D.: Not detected (result is less than RL)

#### Phthalate content (DIBP、DEHP、DBP、BBP、DINP、DIDP、DNOP) - Item 51& 52 of Annex XVII of 3. REACH Regulation (EC) 1907/2006

EN 14372:2004 & IEC 62321-8:2017, determined by GC-MS

Compound		Result(s)	Limit (%)	RL (%)	
1	DBP	Dibutyl Phthalate CAS# 84-74-2	N.D.	- (	0.005
2	BBP	Benzylbutyl Phthalate CAS# 85-68-7	N.D.	-	0.005

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3	DEHP	Bis-(2-ethylhexyl)Phthalate CAS# 117-81-7	N.D.	(-)	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	(E)	0.005
5	DNOP	Di-n-octyl phthalate CAS# 117-84-0	N.D.	-	0.005
6	DINP	Di-iso-nonyl phthalate CAS# 28553-12-0	N.D.	-	0.005
7	DIDP	Diisodecyl phthalate CAS# 26761-40-0	N.D.	-	0.005
8	Sum of	1, 2, 3 & 4	N.D.	0.1	
9	Sum of	5, 6 & 7	N.D.	0.1	-
	Conclu	sion	PASS	-	-

Remark(s): (a) RL: Report limit

(b) N.D.: Not detected (result is less than RL)

# 4. 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

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

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Remark: (a) mg/kg: milligram per kilogram

(b) RL: Report limit

(c) N.D.: Not detected (result is less than RL)

1: Material 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.

### 5. Azo colourants content - Item 43 of Annex XVII of REACH Regulation (EC) No 1907/2006 & amendment EC No 552/2009 and (EU) No 126/2013 ISO 14362-1:2017& ISO 14362-3:2017, determined by GC/MS and HPLC

Compound		Material	Limit	RL	
	Compound	3	(mg/kg)	(mg/kg)	
1	Biphenyl-4-ylamine/4-aminobiphenyl/ Xenylamine CAS#92-67-1	N.D.	30	5	
2	Benzidine CAS#92-87-5	N.D.	30	5	
3	4-chloro-o-toluidine CAS#95-69-2	N.D.	30	5	
4	2-Naphthylamine CAS#91-59-8	N.D.	30	5	
5	o-aminoazotoluene/4-o-tolyazao-o- toluidine /4-amino-2',3- dimethylazobenzene* CAS#97-56-3	N.D.	30	5	
6	5-nitro-o-toluidine/2-amino-4- nitrotoluol* CAS#99-55-8	N.D.	30	5	
7	4-chloroaniline CAS#106-47-8	N.D.	30	5	
8	4-methoxy-m-phenylenediamine/ 2,4-diaminoanisole CAS#615-05-4	N.D.	30	5	
9	4,4'-methylenedianiline/ 4,4'-diaminodiphenylmethane CAS#101-77-9	N.D.	30	5	
10	3,3'-dichlorobenzidine/ 3,3'-dichlorobiphenyl-4,4'- ylenediamine CAS#91-94-1	N.D.	30	5	
11	3,3'-dimethoxybenzidine/o-dianisidine CAS#119-90-4	N.D.	30	5	
12	3,3'-dimethylbenzidine/4,4'-bi-o-toluidine CAS#119-93-7	N.D.	30	5	
13	4,4'-methylenedi-o-toluidine CAS#838-88-0	N.D.	30	5	
14	6-methoxy-m-toluidine/p-cresidine CAS#120-71-8	N.D.	30	5	

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Guangzhou Depuhua Test Services Co. Ltd.

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## **REPORT**

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15	4,4'-methylene-bis-(2-chloro-aniline)/ 2,2'-dichloro-4,4'-methylene-dianiline CAS#101-14-4	N.D.	30	5
16	4,4'-oxydianiline CAS#101-80-4	N.D.	30	5
17	4,4'-thiodianiline CAS#139-65-1	N.D.	30	5
18	o-toluidine/2-aminotoluen CAS#95-53-4	N.D.	30	5
19	2,4-diaminotoluene/2,4- toluylendiamine/ methyl-m-phenylenediamine CAS#95-80-7	N.D.	30	5
20	2,4,5-trimethylaniline CAS#137-17-7	N.D.	30	5
21	o-anisidine/2-methoxyaniline CAS#90-04-0	N.D.	30	5
22	4-aminoazobenzene** CAS#60-09-3	N.D.	30	5
	Conclusion	PASS	-	-

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

#### Colour Fastness to Rubbing - EN ISO 105-X12:2016

Sample		Result	(Grade)
Sample		Dry	Wet
3		4-5	4-5

Remark(s): Grey Scale Rating is based on the 5-step of 1 to 5, where 1 is bad and 5 is good.

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<sup>(</sup>c) RL: Report limit
\*: The amines o-aminoazotoluene (No 5, CAS No.97-56-3) and 2-amino-4-nitrotoluene (No 6, CAS No.99-55-8) are further reduced to o-toluidine (No 18,

CAS No. 95-53-4) and 2, 4-diaminotoluene (No 19, CAS No. 95-80-7).

\*\*: Azo colorants that are able to form 4-aminoazobenzene (No 22, CAS No. 60-09-3) generate, under the condition of this method, aniline (CAS No. 62-53-3) and 1, 4-phenylendiamine (CAS No. 106-50-3). Due to detection limits, only aniline may be detected. If aniline is detected above 5mg/kg, then the presence of these colorants should be tested by ISO 14362-3:2017.

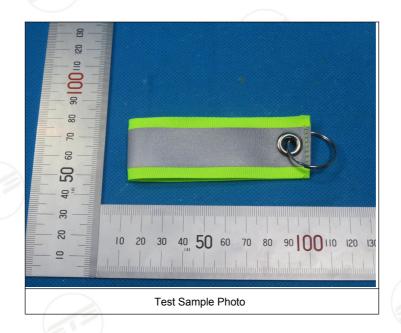




### **Material List:**

Material #	Position / Sample Description				
1	Silvery metal, circle				
2	Silvery metal, double circle				
3	Fluorescent green fabric with coating, reflective cloth				

### Photo(s):



<<<< END OF REPORT >>>>>

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