TEST REPORT

Reference No.	:	WTF19F11076186A1C
Applicant	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer	:	103369
Sample Name	:	Ball pen key ring and PU wallet
Model No.	:	KC7109
Test Requested	:	1) Determination of Cadmium content in the submitted sample in accordance with REACH regulation Annex XVII Entries 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011, No. 835/2012 and (EU) 2016/217 2) Determination of Lead content in the submitted sample in accordance with REACH regulation Annex XVII Entries 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628 3) Determination of specified Phthalates content according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005 4) Determine the specified AZO Colorants contents in the submitted sample in according to the Entries 43 in Annex XVII of the REACH Regulation (EC) No.1907/2006 and the Amendment Regulation (EC) No.552/ 2009 & No.126/ 2013 (previously restricted under Directive 2002/61/EC). 5) As requested by the applicant, to test Colour Fastness to Rubbing in the submitted sample.
Test Method	:	Please refer to next page (s)
Test Conclusion	:	Please refer to next page (s)
Date of Receipt sample	:	2019-11-04 & 2019-11-21
Date of Test	:	2019-11-04 to 2019-11-25
Date of Issue	:	2019-11-25
Test Result	:	Please refer to next page (s)

Remarks:

The results shown in this test report refer only to the sample(s) tested; this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Test Result:

1) Cadmium (Cd)

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

Test Item	MDL (mg/kg)	Results (mg/kg)	
		No.1+No.4+No.9	No.3
Cadmium(Cd)	2	ND*	ND
Conclusion	--	**Pass**	**Pass**

Note:

(1) mg/kg = milligram per kilogram

(2) ND = Not Detected (lower than MDL)

(3) MDL = Method Detection Limit

(4) Limit of Cadmium according to REACH regulation Annex XVII Item 23 (EC) No. 1907/2006 and the amendment No. 552/2009, No. 494/2011 and No. 835/2012 and (EU) 2016/217.

Category	Limit (mg/kg)
Wet paint	100
Surface coating	1000
Plastic	100
Metal parts of jewellery and hair accessories	100

(5) "*" = Results are calculated by the minimum weight of mixed components.

2) Lead (Pb)

Test Method: With reference to IEC 62321-5:2013, the analysis was performed by ICP-OES.

Test Item	MDL (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.1+No.9	No.2+No.10	No.3	
Lead(Pb)	2	99*	ND*	ND	500
Conclusion	--	**Pass**	**Pass**	**Pass**	--

Test Item	MDL (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.4	No.5	No.6+No.7+No.8	
Lead(Pb)	2	ND	ND	ND*	500
Conclusion	--	**Pass**	**Pass**	**Pass**	--

Note:

(1) mg/kg = milligram per kilogram

(2) ND = Not Detected (lower than MDL)

(3) MDL = Method Detection Limit

(4) Limit of Lead was quoted from REACH regulation Annex XVII Item 63 (EC) No. 1907/2006 and the amendment No. 836/2012 and (EU) 2015/628.

(5) "*" = Results are calculated by the minimum weight of mixed components.

3) Phthalates

Test Method: With reference to EN14372:2004, by Gas Chromatographic-Mass Spectrometric (GC-MS) analysis.

Test Items	MDL (%)	Results (%)		Limit (%)
		No.1+No.4+No.9	No.3	
Benzyl butyl phthalate (BBP)	0.005	ND*	ND	sum of four phthalates < 0.1
Di (2-ethyl hexyl)- phthalate (DEHP)	0.005	ND*	ND	
Dibutyl phthalate (DBP)	0.005	ND*	ND	
Diisobutyl phthalate (DIBP)	0.005	ND*	ND	
Diisodecyl phthalate (DIDP)	0.01	ND*	ND	sum of three phthalates < 0.1
Diisononyl phthalate (DINP)	0.01	ND*	ND	
Di-n-octyl phthalate (DNOP)	0.005	ND*	ND	
Conclusion	--	**Pass**	**Pass**	--

Note:

DBP= Dibutyl phthalate BBP= Benzyl butyl phthalate DEHP= Bis-(2-ethylhexyl)- phthalate
DINP= Di-isononyl phthalate DNOP= Di-n-octyl phthalate DIDP= Di-isodecyl phthalate
DIBP= Diisobutyl phthalate

(1) % = percentage by weight
(2) ND = Not detected or Less than the method detection limit
(3) MDL=Method Detection Limit
(4) “<” = less than
(5) The above limit was quoted according to Annex XVII Items 51 & 52 of the REACH Regulation (EC) No. 1907/2006 & Amendment No. 552/2009 & No. 2018/2005 (formerly known as Directive 2005/84/EC) for phthalate content in toys and child care articles.
(6) “*” = Results are calculated by the minimum weight of mixed components.

4) AZO

Test Method: With reference to BS EN ISO 14362-1：2017 and BS EN ISO 14362-3：2017, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS)

No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)	
				No.1+No.4+ No.9	No.5
1	4-Aminobiphenyl	92-67-1	30	ND*	ND
2	Benzidine	92-87-5	30	ND*	ND
3	4-chloro-o-Toluidine	95-69-2	30	ND*	ND
4	2-Naphthylamine	91-59-8	30	ND*	ND
5	o-Aminoazotoluene	97-56-3	30	ND*	ND
6	2-Amino-4-nitrotoluene	99-55-8	30	ND*	ND
7	p-Chloroaniline	106-47-8	30	ND*	ND
8	2,4-diaminoanisol	615-05-4	30	ND*	ND
9	4,4’-Diaminodiphenylmethane	101-77-9	30	ND*	ND
10	3,3’-Dichlorobenzidine	91-94-1	30	ND*	ND
11	3,3’-Dimethoxybenzidine	119-90-4	30	ND*	ND
12	3,3’-Dimethylbenzidine	119-93-7	30	ND*	ND
13	3,3’-Dimethyl-4,4’-diaminodiphenylmethane	838-88-0	30	ND*	ND
14	p-cresinin	120-71-8	30	ND*	ND
15	4,4’-Methylen-bis-(2-chloroaniline)	101-14-4	30	ND*	ND
16	4,4’-Oxydianiline	101-80-4	30	ND*	ND
17	4,4’-Thiodianiline	139-65-1	30	ND*	ND
18	o-Toluidine	95-53-4	30	ND*	ND
19	2,4-Toluylendiamine	95-80-7	30	ND*	ND
20	2,4,5 – Trimethylaniline	137-17-7	30	ND*	ND
21	o-anisidine	90-04-0	30	ND*	ND
22	4-aminoazobenzene	60-09-3	30	ND*	ND
23	2,4-Xylidin	95-68-1	30	ND*	ND
24	2,6-Xylidin	87-62-7	30	ND*	ND
Conclusion		--	--	**Pass**	**Pass**

Note:

- ND = Not detected or less than the method detection limit
- mg/kg=Milligram per kilogram
- Method Detection Limit (mg/kg): Each 5mg/kg
- The CAS-numbers 97-56-3 and 99-55-8 are further reduced to CAS-numbers 95-53-4 and 95-80-7.
- AZO colorants that are able to form 4-aminoazobenzene, generate under the condition of this method aniline and 1,4-phenylenediamine. The presence of these colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorant used.
- The CAS-numbers 95-68-1 and 87-62-7 are not proscribed under REACH Regulation (EC) No 1907/2006
- “*”= Results are calculated by the minimum weight of mixed components.

5) Colour Fastness to Rubbing

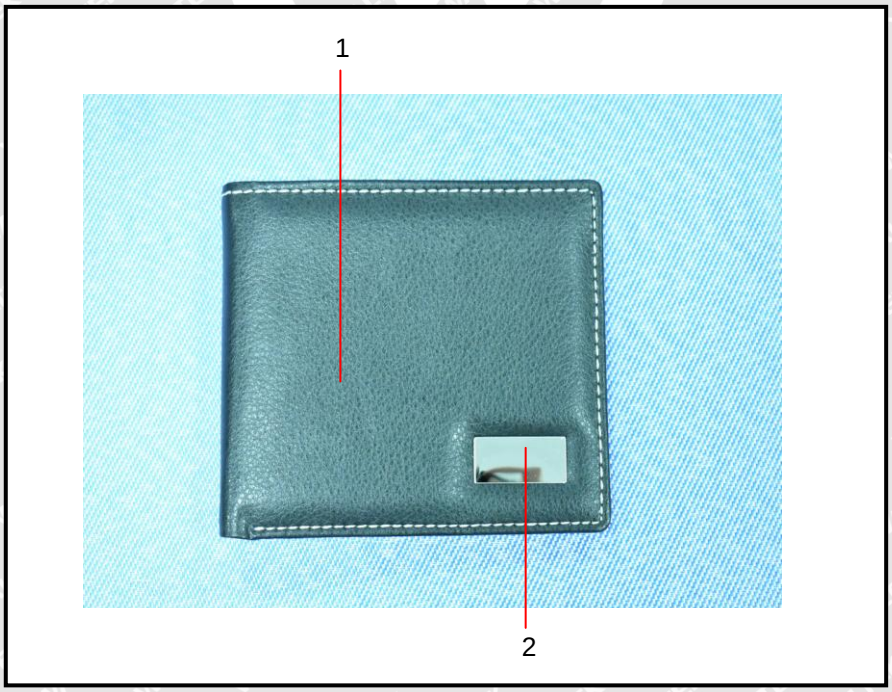
Colour Fastness to Rubbing				
(ISO 105 X12: 2001/Cor 2002; Size of rubbing finger: 16mm diameter.)				
	No.1	**No.4**	**No.5**	**Client's Limit**
Dry staining	4	4	4-5	2-3
Wet staining	4	4	4-5	2-3
Conclusion	**Pass**	**Pass**	**Pass**	--

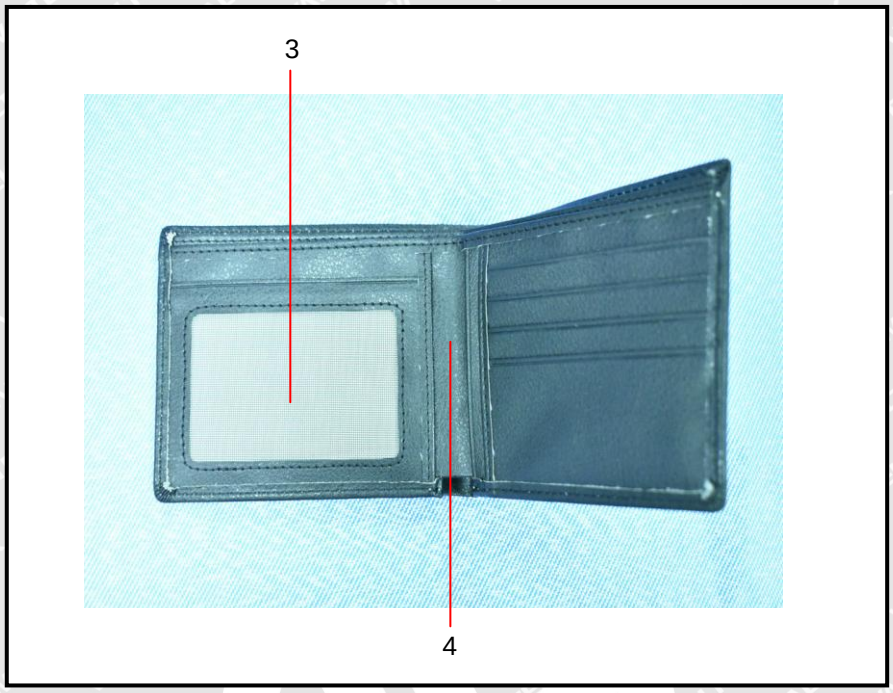
Note:
(1) Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

Test Specimen Description:
No.1: Black synthetic leather
No.2: Silvery metal sheet
No.3: Black plastic net
No.4: Black synthetic leather
No.5: Black lining fabric
No.6: Silvery metal ring
No.7: Silvery metal button
No.8: Silvery metal buckle
No.9: Black synthetic leather
No.10: Silvery metal screw

Sample photo:

Photographs of parts tested:

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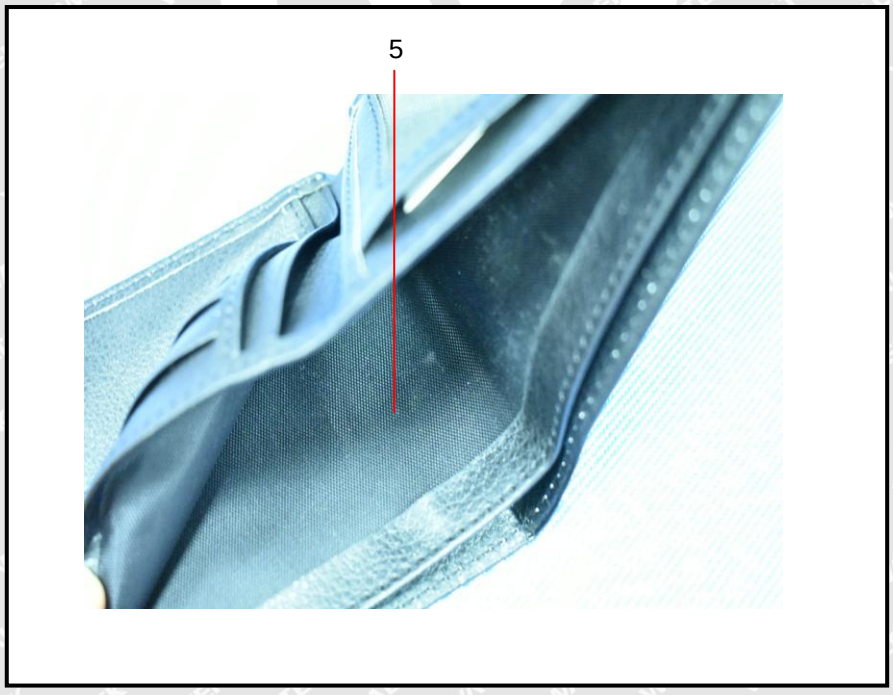
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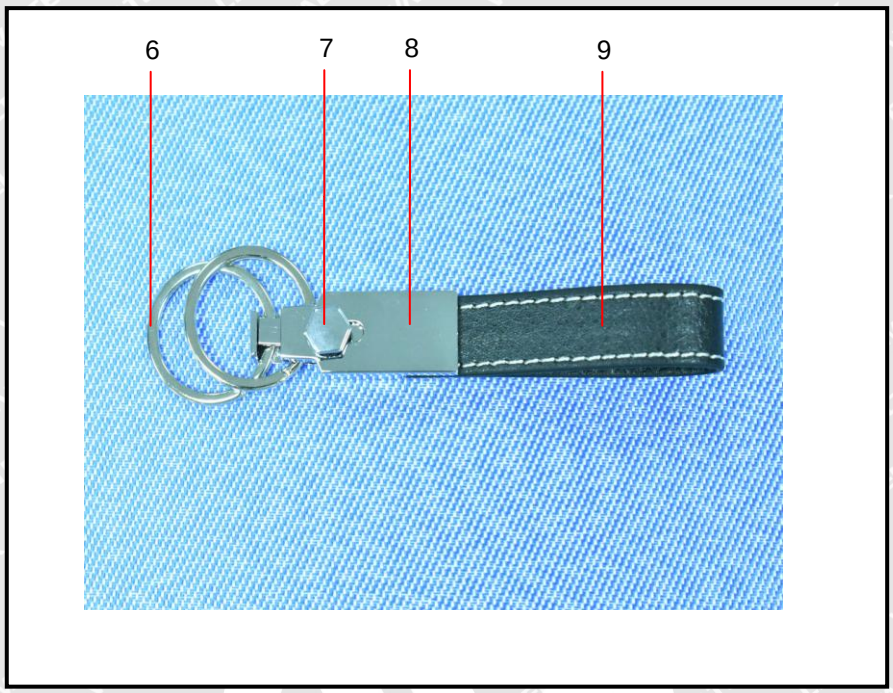

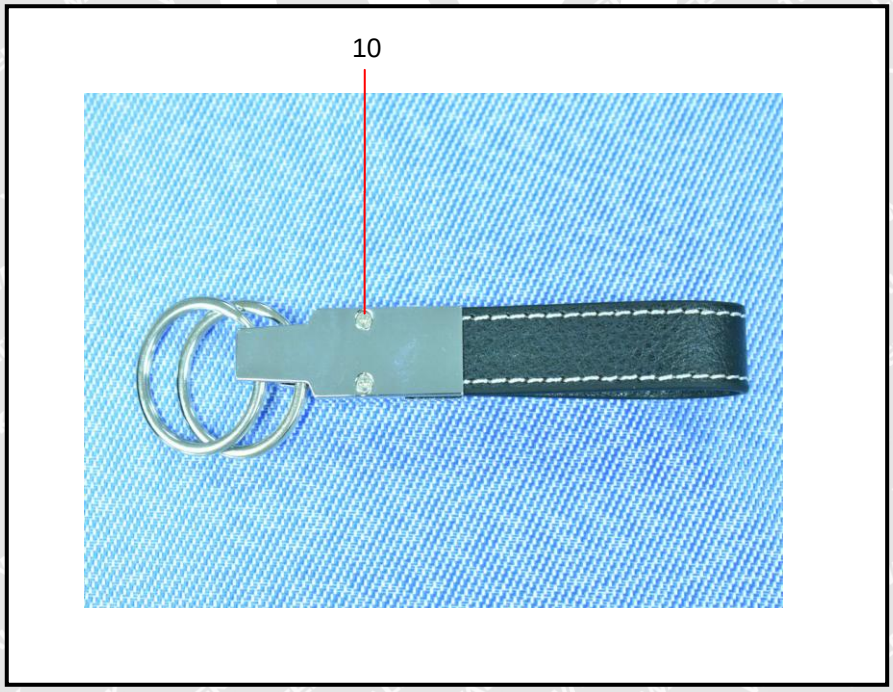

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