



# TEST REPORT

**Report No.** ..... : WTF22F09178788C  
**Applicant** ..... : Mid Ocean Brands B.V.  
**Address** ..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan,  
Kowloon, Hong Kong  
**Manufacturer** ..... : 114914  
**Sample Name** ..... : Cap  
**Sample Model** ..... : MH2802, MH2804, MH2808, MH2814, MH2212  
**Test Conclusion** ..... : Refer to next page (s)  
**Date of Receipt sample** ..... : 2022-09-01  
**Testing period** ..... : 2022-09-01 to 2022-09-13  
**Date of Issue** ..... : 2022-09-14  
**Test Result** ..... : Refer to next page (s)  
**Note** ..... : As specified by client, only test the designated sample.

**Prepared By:**

**Waltek Testing Group (Foshan) Co., Ltd.**

Address: No.13-19, 2/F., 2nd Building, Sunlink International Machinery City,  
Chencun, Shunde District, Foshan, Guangdong, China  
Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

Signed for and on behalf of  
Waltek Testing Group (Foshan) Co., Ltd.

Swing.Liang



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- Test Requested**..... :
- 1) 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
  - 2) 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
  - 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) Determination of specified Polycyclic Aromatic Hydrocarbons (PAHs) content in submitted sample in accordance with Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013.
  - 6) Nickel content requirement in Annex XVII Item 27 of the REACH Regulation (EC) No. 1907/2006 & amendment No.552/2009 (formerly known as Directive 94/27/EC and 2004/96/EC)
  - 7) As requested by the applicant, to test Colour Fastness to Rubbing in the submitted sample.

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Sample photo:



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**Test Results:**

**1) Lead (Pb)**

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

Test Item	LOQ (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.1+No.2+No.5	No.3	
Lead(Pb)	2	ND*	ND	500
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	--

Test Item	LOQ (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.4	No.6+No.9	
Lead(Pb)	2	ND	ND*	500
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	--

Test Item	LOQ (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.7	No.8	No.10+No.11	
Lead(Pb)	2	96	ND	ND*	500
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	--

**Note:**

- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than LOQ)
- (3) LOQ = Limit of quantitation
- (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.



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## 2) Cadmium (Cd)

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

Test Item	LOQ (mg/kg)	Results (mg/kg)		
		No.1+No.2+No.5	No.3	No.4
Cadmium(Cd)	2	ND*	ND	ND
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Test Item	LOQ (mg/kg)	Results (mg/kg)		
		No.6+No.9	No.8	No.10+No.11
Cadmium(Cd)	2	ND*	ND	ND*
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### Note:

- (1) mg/kg = milligram per kilogram
- (2) ND = Not Detected (lower than LOQ)
- (3) LOQ = Limit of quantitation
- (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.



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### 3) Phthalates

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

Test Items	LOQ (%)	Results (%)			Limit (%)
		No.4	No.6	No.9	
Benzyl butyl phthalate (BBP)	0.005	ND	ND	ND	sum of four phthalates < 0.1
Di (2-ethyl hexyl)- phthalate (DEHP)	0.005	ND	ND	ND	
Dibutyl phthalate (DBP)	0.005	ND	ND	ND	
Diisobutyl phthalate (DIBP)	0.005	ND	ND	ND	
Diisodecyl phthalate (DIDP)	0.01	ND	ND	ND	sum of three phthalates < 0.1
Diisononyl phthalate (DINP)	0.01	ND	ND	ND	
Di-n-octyl phthalate (DNOP)	0.005	ND	ND	ND	
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	--

#### 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 lower than limit of quantitation

(3) LOQ = Limit of quantitation

(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.



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



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

**Note:**

- ND = Not Detected or lower than limit of quantitation
- mg/kg=Milligram per kilogram
- Limit of quantitation (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.





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### 5) Polycyclic Aromatic Hydrocarbons (PAHs)

Test Method: With reference to AFPS GS 2019:01 PAK method, analysis was performed by Gas Chromatographic Mass Spectrometry (GC-MS).

Test Items	Unit	Results		LOQ	Limit
		No.4	No.6+No.9		
Benzo(a)anthracene (BaA)	mg/kg	ND	ND*	0.2	1.0
Chrysene (CHR)	mg/kg	ND	ND*	0.2	1.0
Benzo[b]fluoranthene (BbFA)	mg/kg	ND	ND*	0.2	1.0
Benzo[k]fluoranthene (BkFA)	mg/kg	ND	ND*	0.2	1.0
Benzo(a)pyrene (BaP)	mg/kg	ND	ND*	0.2	1.0
Dibenzo[a,h]anthracene (DBA <sub>h</sub> A)	mg/kg	ND	ND*	0.2	1.0
Benzo[j]fluoranthene (BjFA)	mg/kg	ND	ND*	0.2	1.0
Benzo[e]Pyrene (BeP)	mg/kg	ND	ND*	0.2	1.0
<b>Conclusion</b>	--	<b>Pass</b>	<b>Pass</b>	--	--

#### Note:

- (1) ND = Not Detected or lower than limit of quantitation
- (2) mg/kg=milligram per kilogram=ppm
- (3) LOQ = Limit of quantitation
- (4) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Articles shall not be placed on the market for supply to the general public, if any of their rubber or plastic components 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, contain more than 1 mg/kg (0,0001 % by weight of this component) of any of the listed PAHs.
- (5) As per Entries 50 of Annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 1272/2013, Toys, including activity toys, and childcare articles, shall not be placed on the market, if any of their rubber or plastic components 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, contain more than 0,5 mg/kg (0,00005 % by weight of this component) of any of the listed PAHs.
- (6) "\*" = Results are calculated by the minimum weight of mixed components.



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### 6) Nickel release

Test method: With reference BS EN1811: 2011+A1:2015, Nickel content was determined by Inductively Coupled Argon Plasma Spectrometry

Item No.	Sample Area (cm <sup>2</sup> )	Volume of Test Solution(ml)	Nickel release (µg/cm <sup>2</sup> /week)				Conclusion
			Trial 1	Trial 2	Trial 3	Average	
No.7	6.28	10	ND	ND	ND	ND	Pass

#### Note:

- (1) µg/cm<sup>2</sup>/week = microgram per square centimetre per week
- (2) Limit of quantitation = 0.05 µg/cm<sup>2</sup>/week
- (3) ND = Not Detected or lower than limit of quantitation
- (4) Interpretation of test results:

Type of sample	Nickel Release(µg/cm <sup>2</sup> /week)	
	Pass	Fail
Other components in direct and prolonged contact with the skin	<0.88	≥0.88
Post assemblies and body piercings (Post assemblies which are inserted into pierced parts of the human body)	<0.35	≥0.35

### 7) Colour Fastness to Rubbing

Colour Fastness to Rubbing						
(ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.)						
		No.1	No.2	No.3	No.6	Client's Limit
Length	Dry staining	4	4-5	4-5	4-5	2-3
	Wet staining	2-3	3	4-5	3	2-3
Width	Dry staining	4	4-5	4-5	4-5	2-3
	Wet staining	2-3	3	4-5	3	2-3
<b>Conclusion</b>		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	--

#### Note:

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



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Specimen No.	Specimen Description
1	Dark blue main fabric
2	Dark blue main fabric
3	Dark blue net fabric
4	Dark blue plastic bucket
5	White plastic sheet
6	Dark blue fabric
7	Silver metal rivet
8	White fabric rim
9	White plastic sheet
10	Dark blue plastic loop(VELCRO)
11	Dark blue plastic hook(VELCRO)

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Photograph of parts tested:





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Remarks:

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===== End of Report =====

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