



TEST REPORT

Reference No. : WTF20F02005403C
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
Model No. : MH2314, MH2315
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) 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).
3) As requested by the applicant, to test Colour Fastness to Rubbing in the submitted sample.
4) 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)
Test Method : Please refer to next page (s)
Test Conclusion : Please refer to next page (s)
Date of Receipt sample : 2020-02-25
Date of Test : 2020-02-25 to 2020-03-06
Date of Issue : 2020-03-06
Test Result : Please refer to next page (s)

Remarks:

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**Test Result:****1) 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.2+No.7	No.3+No.4 +No.5	
Lead(Pb)	2	ND	ND*	ND*	500
Conclusion	--	Pass	Pass	Pass	--

Test Item	MDL (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.6+No.10	No.8	No.9	
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.

WALTEK



2) 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.7
1	4-Aminobiphenyl	92-67-1	30	ND	ND*
2	Benidine	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



No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)	
				No.3+No.4+No.5	No.6+No.10
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	26*	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	18*	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



No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.8
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
Conclusion		--	--	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.



3) Colour Fastness to Rubbing

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

Colour Fastness to Rubbing			
(ISO 105 X12: 2001/Cor 2002; Size of rubbing finger: 16mm diameter.)			
	No.6	No.10	Client's Limit
Dry staining	4-5	4-5	2-3
Wet staining	4-5	4	2-3
Conclusion	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.

4) 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 ²)	Volume of Test Solution(ml)	Nickel release (µg/cm ² /week)				Conclusion
			Trial 1	Trial 2	Trial 3	Average	
No.9	1.84	5	ND	ND	ND	ND	Pass

Note:

- (1) µg/cm²/week = microgram per square centimetre per week
- (2) Method Detection limit = 0.05 µg/cm²/week
- (3) ND = Not detected or less than the value of Method Detection Limit
- (4) Interpretation of test results:

Type of sample	Nickel Release(µg/cm ² /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



Test Specimen Description:

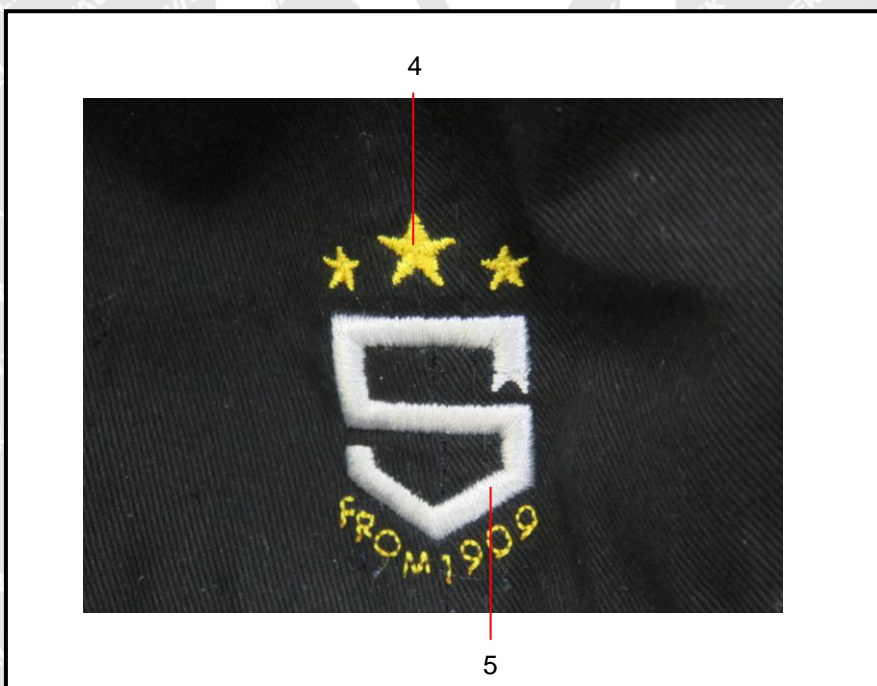
- No.1: Black cloth
- No.2: Black cloth with white-yellow printing
- No.3: Black sewing thread
- No.4: Yellow sewing thread
- No.5: Grey sewing thread
- No.6: White cloth
- No.7: Yellow cloth
- No.8: Black cloth
- No.9: Silvery metal cap
- No.10: Black cloth

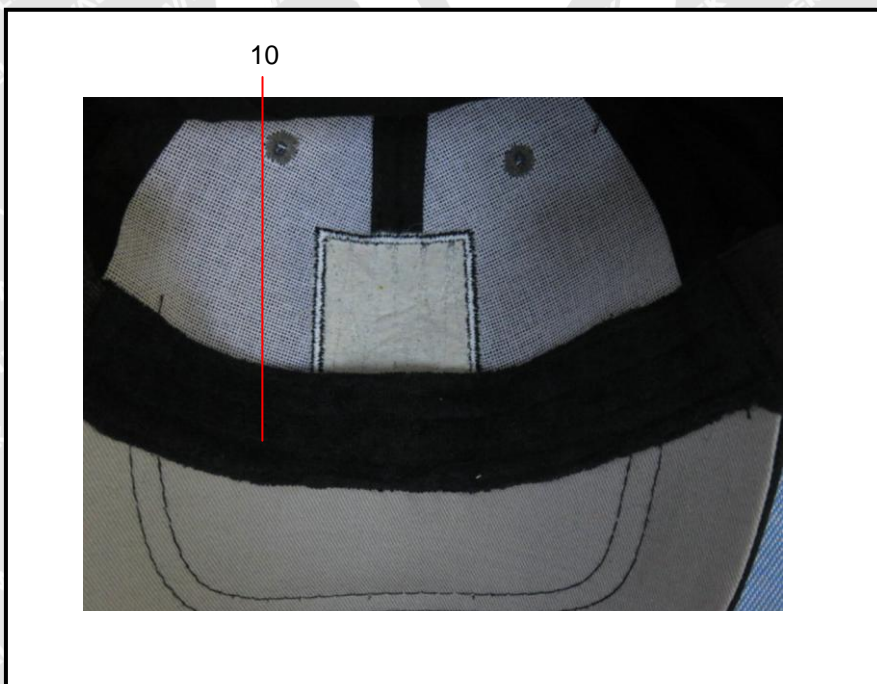
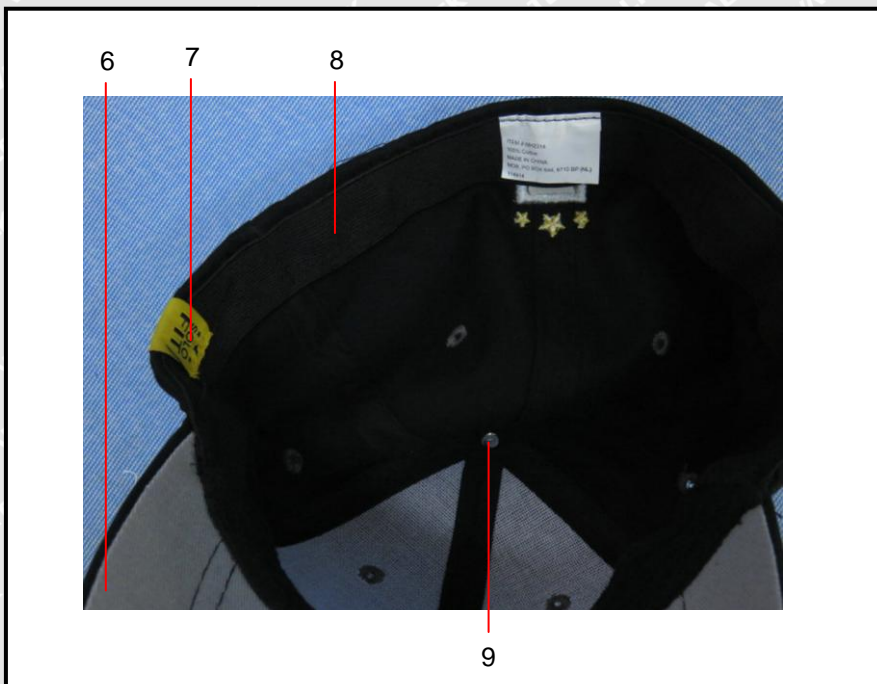
Sample photo:





Photographs of parts tested:





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