



TEST REPORT

Report No. : WTF23F04079366A2R2C
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 : Refer to next page (s)
Sample Model : Refer to next page (s)
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) 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)
6) As requested by the applicant, to test Colour Fastness to
Rubbing in the submitted sample.
Test Conclusion : Refer to next page (s)
Date of Receipt sample : 2023-04-14 & 2023-05-09 & 2023-05-26
Testing period : 2023-04-14 to 2023-06-06
Date of Issue : 2023-06-07
Test Result : Refer to next page (s)
Note : 1) As specified by client, only test the designated sample.
2) As per client's requirement, all results of specimen are
quoted from report No.WTF23F04079366A2C.

Prepared By:

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

Swing Liang

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Specimen No.	Specimen Description	Sample Name	Sample Model
1	Grey fabric sheet	Cap with coloured curve on panels, Cap with 2-colour fabric on visor, Trucker hat with mesh & coloured band, Camouflage cap (with leaf print camo fabric), Camouflage cap(Luminescent safe fabric + Kanati camo)	MH2014, MH2015, MH2207, MH2318, MH2319
2	Grey main fabric		
3	Off-white main fabric		
4	Blue fabric sheet		
5	Blue fabric sheet		
6	Black main fabric		
7	Red main fabric		
8	Black fabric sheet		
9	Multicolor main fabric		
10	Multicolor fabric sheet		
11	Orange main fabric		
12	Grey rim fabric		
13	Pink rim fabric		
14	Black rim fabric		
15	Grey plastic loop(VELCRO)		
16	Grey plastic hook(VELCRO)		
17	Black plastic loop(VELCRO)		
18	Black plastic hook(VELCRO)		
19	White plastic net		
20	Black plastic net		
21	Black plastic buckle		
22	Silvery metal rivet		



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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.3	No.4+No.5+No.6	
Lead(Pb)	2	ND*	ND*	500
Conclusion	--	Pass	Pass	--

Test Item	LOQ (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.7+No.8+No.9	No.10+No.11+No.12	
Lead(Pb)	2	ND*	ND*	500
Conclusion	--	Pass	Pass	--

Test Item	LOQ (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.13+No.14	No.15+No.16	
Lead(Pb)	2	ND*	ND*	500
Conclusion	--	Pass	Pass	--

Test Item	LOQ (mg/kg)	Results (mg/kg)		Limit (mg/kg)
		No.17+No.18	No.19	
Lead(Pb)	2	ND*	ND	500
Conclusion	--	Pass	Pass	--

Test Item	LOQ (mg/kg)	Results (mg/kg)			Limit (mg/kg)
		No.20	No.21	No.22	
Lead(Pb)	2	ND	ND	ND	500
Conclusion	--	Pass	Pass	Pass	--

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.19	No.20	No.21
Cadmium(Cd)	2	ND	ND	ND
Conclusion	--	Pass	Pass	Pass

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

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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.19+No.20+No.21	
Benzyl butyl phthalate (BBP)	0.005	ND*	sum of four phthalates < 0.1
Di (2-ethyl hexyl)- phthalate (DEHP)	0.005	ND*	
Dibutyl phthalate (DBP)	0.005	ND*	
Diisobutyl phthalate (DIBP)	0.005	ND*	
Diisodecyl phthalate (DIDP)	0.01	ND*	sum of three phthalates < 0.1
Diisononyl phthalate (DINP)	0.01	ND*	
Di-n-octyl phthalate (DNOP)	0.005	ND*	
Conclusion	--	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 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.

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



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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.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-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



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.4+No.5+No.6
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



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.7+No.8+No.9
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



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.10+No.11+No.12
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*
Conclusion		--	--	Pass



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No.	Amines Substances	CAS No.	Limit (mg/kg)	Result (mg/kg)
				No.13+No.14
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*
Conclusion		--	--	Pass

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) 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.22	10.98	10	ND	ND	ND	ND	Pass

Note:

- (1) μg/cm²/week = microgram per square centimetre per week
- (2) Limit of quantitation = 0.05 μg/cm²/week
- (3) ND = Not Detected or lower than limit of quantitation
- (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



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6) 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.4	No.5	Client's Limit
Length	Dry staining	4-5	4-5	4-5	4-5	4-5	2-3
	Wet staining	4-5	4	4-5	4	4-5	2-3
Width	Dry staining	--	--	--	--	--	2-3
	Wet staining	--	--	--	--	--	2-3
Conclusion		Pass	Pass	Pass	Pass	Pass	--

Colour Fastness to Rubbing						
(ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.)						
		No.6	No.7	No.9	No.10	Client's Limit
Length	Dry staining	3-4	4-5	4-5	4-5	2-3
	Wet staining	2-3	3-4	3	3	2-3
Width	Dry staining	--	--	--	--	2-3
	Wet staining	--	--	--	--	2-3
Conclusion		Pass	Pass	Pass	Pass	--

Colour Fastness to Rubbing						
(ISO 105-X12: 2016; Size of rubbing finger: 16mm diameter.)						
		No.11	No.12	No.13	No.14	Client's Limit
Length	Dry staining	4-5	4-5	4-5	4-5	2-3
	Wet staining	4-5	4-5	4	4	2-3
Width	Dry staining	--	--	--	--	2-3
	Wet staining	--	--	--	--	2-3
Conclusion		Pass	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.



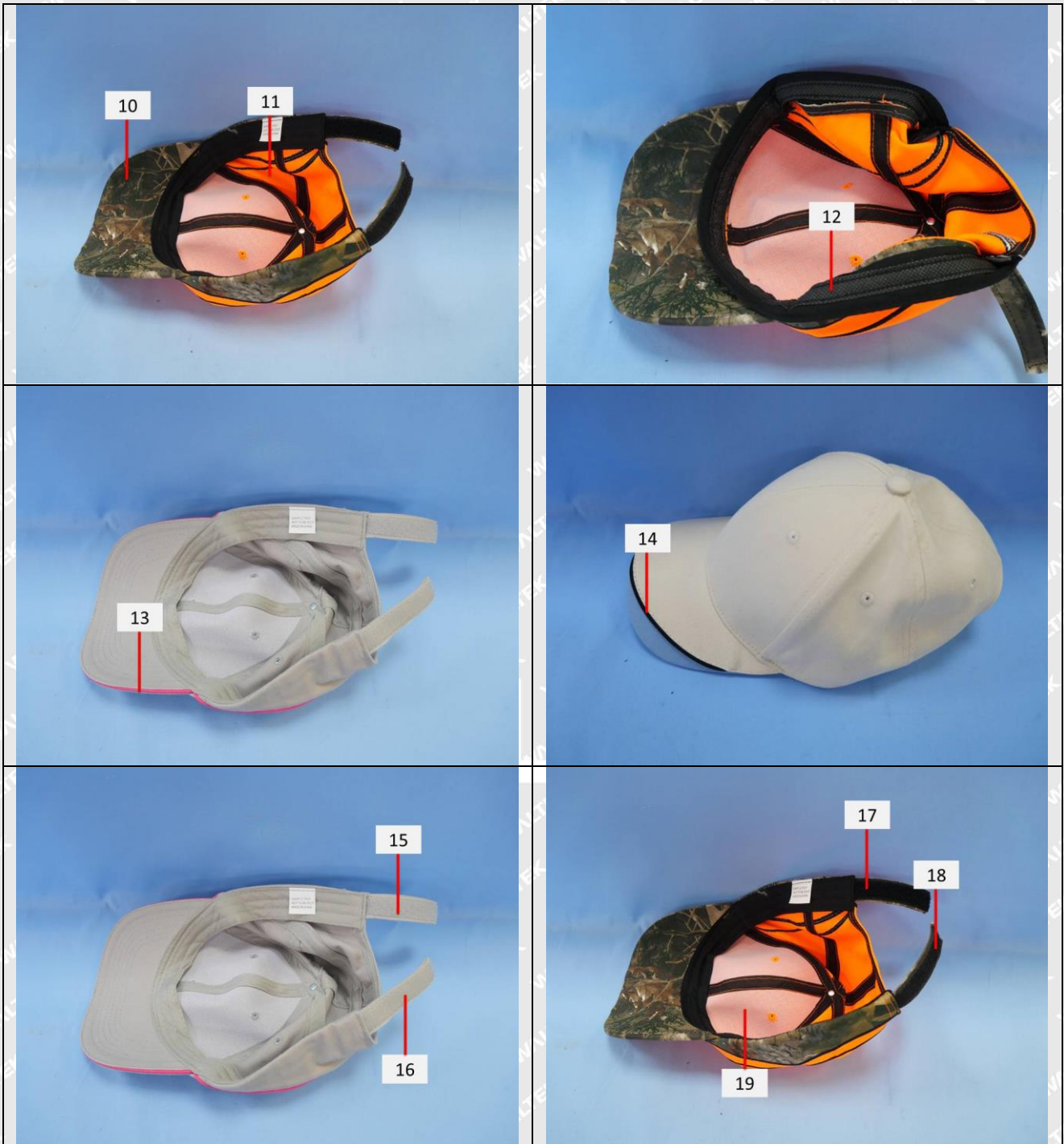
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Photograph of parts tested:





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Remarks:

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

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