The following information was/were submitted and identified by/on behalf of the client:

Applicant	:	Mid Ocean Brands B.V.
Applicant's Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Sample Name	:	USB HUB
Tested Model	:	MO8853
Sample Receive Date	:	Dec. 20, 2024
Sample Testing Period	:	Dec. 20, 2024 - Dec. 30, 2024

Test Result Summary:

As requested by the applicant, for details refer to attached page(s).

TEST ITEM(S)	TEST REQUESTED	CONCLUSION(S)
Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers(PBDEs) and Phthalates(DBP, BBP, DEHP, DIBP)	As specified by client, to comply with the Limits for Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive (EU) 2015/863 amending Annex II of Directive 2011/65/EU) on the submitted sample(s)	PASS

Authorized signature:

Lab Manager: Gavin Zhou

NINGBO GIG TESTING CO.,LTD. GIG

Dec. 30, 2024

Test Result(s):

Part 1. Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent chromium(Cr(VI)), Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers(PBDEs)

Test Method:

Screening Test by XRF spectrometry

With reference to IEC 62321-3-1:2013, Screening of Lead(Pb), Mercury(Hg), Cadmium(Cd), Total chromium(Cr) and Total bromine(Br) by X-ray fluorescence(XRF) spectrometry

Chemical Confirmation Test

Lead(Pb), Cadmium(Cd) – IEC 62321-5:2013, Acid digestion and determined by ICP-OES

Mercury(Hg) – IEC 62321-4:2013/AMD1:2017, Acid digestion and determined by ICP-OES

Cr(VI) – IEC 62321-7-1:2015, Boiling water extraction and determined colorimetrically by UV-vis

& IEC 62321-7-2:2017, Solution extraction and determined colorimetrically by UV-vis

PBBs, PBDEs – IEC 62321-6:2015, Solvent extraction and determined by GC-MS

Part No.	Description	XRF screening Results					Chemical Confirmation Results (mg/kg)	Conclusion(s)
		Pb	Cd	Hg	Total Cr	Total Br		
1	Silvery metal	BL	BL	BL	BL	---	---	PASS
2	Beige plastic	BL	BL	BL	BL	BL	---	PASS
3	White plastic	BL	BL	BL	BL	BL	---	PASS
4	Black foam	BL	BL	BL	BL	BL	---	PASS
5	Label	BL	BL	BL	BL	BL	---	PASS
6	Silvery plastic	BL	BL	BL	BL	BL	---	PASS
7	Metal (screw)	BL	BL	BL	IN	---	Cr(VI): Negative	PASS
8-1	Silvery metal	BL	BL	BL	IN	---	Cr(VI): Negative	PASS
8-2	Black plastic support	BL	BL	BL	BL	BL	---	PASS
9	PCB	BL	BL	BL	BL	IN	PBBs: N.D. PBDEs: N.D.	PASS
10	Soldering tin (wiring)	BL	BL	BL	BL	---	---	PASS
11	SMD capacitor	BL	BL	BL	BL	BL	---	PASS
12	SMD resistor	BL	BL	BL	BL	BL	---	PASS
13-1	SMD chip (IC)	BL	BL	BL	BL	BL	---	PASS
13-2	Soldering tin (SMD)	BL	BL	BL	BL	---	---	PASS
14	Soldering tin (THC)	BL	BL	BL	BL	---	---	PASS
15	Silvery metal (USB)	BL	BL	BL	IN	---	Cr(VI): Negative	PASS
16	White plastic support	BL	BL	BL	BL	BL	---	PASS
17	Soldering tin	BL	BL	BL	BL	---	---	PASS
18	Translucent support	BL	BL	BL	BL	BL	---	PASS
19	White plastic frame	BL	BL	BL	BL	BL	---	PASS
20	White plastic casing	BL	BL	BL	BL	BL	---	PASS
21	Red wire sheath	BL	BL	BL	BL	BL	---	PASS

Part No.	Description	XRF screening Results					Chemical Confirmation Results (mg/kg)	Conclusion(s)
		Pb	Cd	Hg	Total Cr	Total Br		
22	Green wire sheath	BL	BL	BL	BL	BL	---	PASS
23	Black wire sheath	BL	BL	BL	BL	BL	---	PASS
24-1	White wire sheath	BL	BL	BL	BL	BL	---	PASS
24-2	Copper wire	BL	BL	BL	BL	---	---	PASS
25	Specification	BL	BL	BL	BL	BL	---	PASS

Remark:

(^1) Screening Test by XRF spectrometry

(a) XRF analysis of the result(s) may only related to the surface of the sample(s).

(b) The results of total Cr and total Br only represent the total content of the elements, do not represent Cr(VI), PBBs and PBDEs content correspondingly. As restricted by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU, The result(s) is expressed as total Cr while test items on restricted substances is Cr(VI). The result(s) is expressed as total Br while test items on restricted substances are PBBs and PBDEs.

(c) The results are obtained by XRF screening for primary judgment, further chemical confirmation by ICP-OES (for Pb, Cd, Hg), UV-vis (for Cr(VI)) and GC-MSD (for PBBs, PBDEs) may be performed, if the XRF screening result(s) exceeds the below limits according to IEC 62321-3-1:2013 Table A.2 - Screening limits in mg/kg for regulated elements in various matrices.

Element	Polymers	Metals	Composite material
Cd	BL ≤(70-3σ) <X <(130+3σ) ≤OL	BL ≤(70-3σ) <X <(130+3σ) ≤OL	LOD <X <(150+3σ) ≤OL
Pb	BL ≤(700-3σ) <X <(1300+3σ) ≤OL	BL ≤(700-3σ) <X <(1300+3σ) ≤OL	BL ≤(500-3σ) <X <(1500+3σ) ≤OL
Hg	BL ≤(700-3σ) <X <(1300+3σ) ≤OL	BL ≤(700-3σ) <X <(1300+3σ) ≤OL	BL ≤(500-3σ) <X <(1500+3σ) ≤OL
Br	BL ≤(300-3σ) <X	Not applicable	BL ≤(250-3σ) <X
Cr	BL ≤(700-3σ) <X	BL ≤(700-3σ) <X	BL ≤(500-3σ) <X

BL = Below limit, OL = Over limit, IN = Inconclusive, 3σ = Repeability of the analyser at the action level, X = The region where further investigation is necessary, LOD = Limit of detection.

(d) The XRF screening test of selected elements - The result(s) was/ were only given for reference, as the result(s) may be different to the actual content in the non-uniformity composition, and the results differ based on various factors, including but not limited to the tested part(s)/component(s) size, thickness, surface flatness, equipment parameters and matrix effect etc.

(^2) Chemical Confirmation Test

(a) 1000mg/kg = 0.1%; RL = Reporting Limit; N.D. = Not detected (< RL).

(b) RL and Limits of test items.

Test Item(s)	Reporting Limit (RL)	Limit
Lead(Pb)	10 mg/kg	1000 mg/kg (0.1%)
Cadmium(Cd)	10 mg/kg	100 mg/kg (0.01%)
Mercury(Hg)	10 mg/kg	1000 mg/kg (0.1%)
Chromium VI (Cr VI)	Polymer and composite material: 10 mg/kg, Metal: 0.10 ug/cm^2	1000 mg/kg (0.1%)
Group PBBs	Single compound of PBBs: 50 mg/kg	1000 mg/kg (0.1%)
Group PBDEs	Single compound of PBDEs: 50 mg/kg	1000 mg/kg (0.1%)

(c) According to IEC 62321-7-1:2015, result of Cr(VI) for metal sample is shown as below:

If Cr(VI) concentration > 0.13 ug/cm^2, the sample contains Cr(VI) which is positive for Cr(VI);

If Cr(VI) concentration < 0.10 ug/cm^2, the sample does not contain Cr(VI) which is negative for Cr(VI);

If Cr(VI) concentration ≥ 0.10 ug/cm^2 and ≤ 0.13 ug/cm^2, the result is considered to be inconclusive – Unavoidable coating variations may influence the determination.

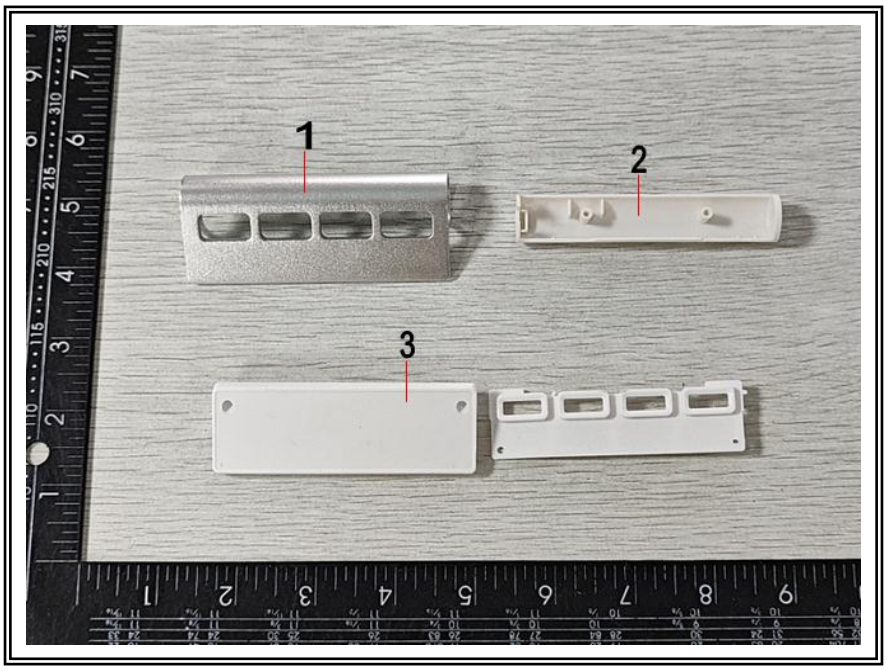
Part 2. Phthalates - Dibutyl phthalate(DBP), Butyl benzyl phthalate(BBP), Bis(2-ethylhexyl) phthalate (DEHP), Diisobutyl phthalate(DIBP)

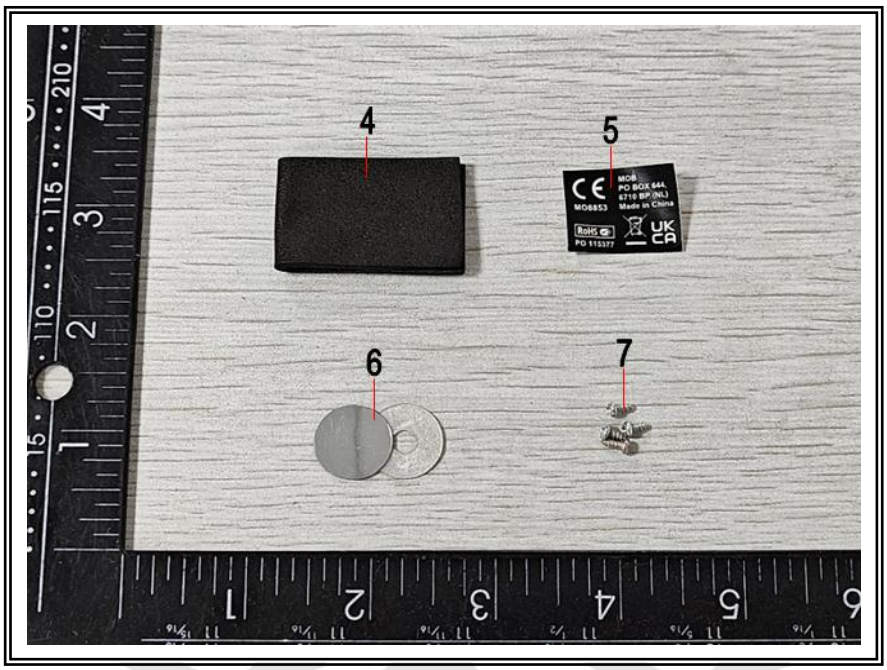
Test Method: IEC 62321-8:2017, Solvent extraction and determined by GC-MS

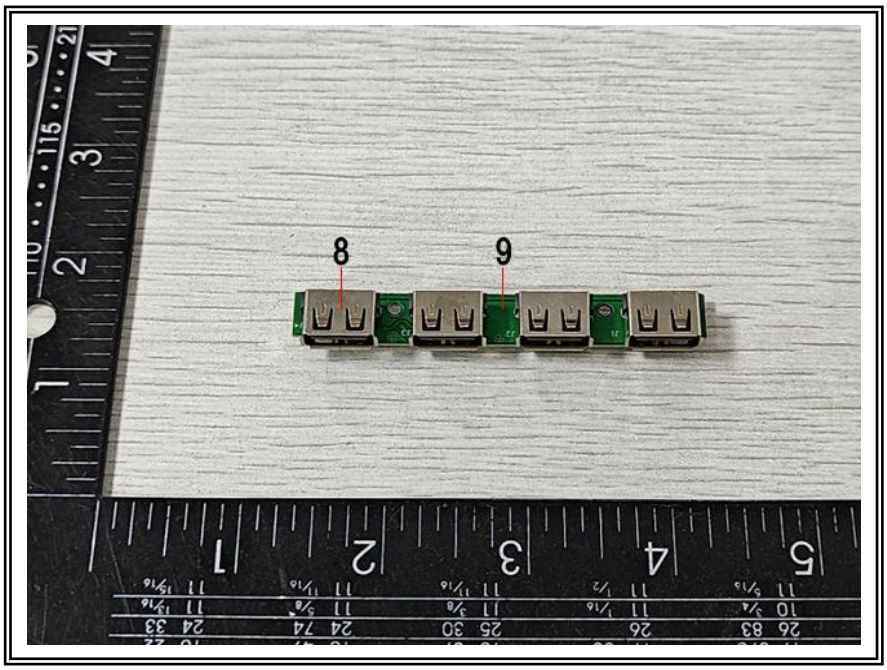
Part No.	Test Results (mg/kg)				Conclusion(s)
	DBP	BBP	DEHP	DIBP	
	RL (mg/kg)				
	50	50	50	50	
	Limit (mg/kg)				
	1000	1000	1000	1000	
2 + 3	N.D.	N.D.	N.D.	N.D.	PASS
4	N.D.	N.D.	N.D.	N.D.	PASS
5	N.D.	N.D.	N.D.	N.D.	PASS
6	N.D.	N.D.	N.D.	N.D.	PASS
8-2 + 16 + 18	N.D.	N.D.	N.D.	N.D.	PASS
9	N.D.	N.D.	N.D.	N.D.	PASS
19 + 20	N.D.	N.D.	N.D.	N.D.	PASS
21 + 22	N.D.	N.D.	N.D.	N.D.	PASS
23 + 24-1	N.D.	N.D.	N.D.	N.D.	PASS
25	N.D.	N.D.	N.D.	N.D.	PASS

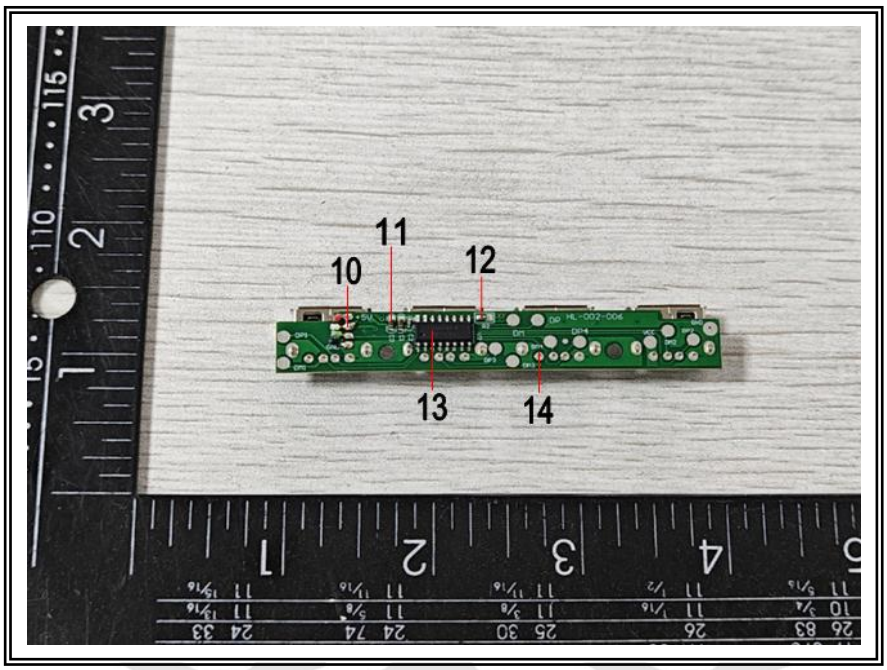
Note: 1. 1000mg/kg = 0.1%;
2. N.D. = Not detected (<RL);
3. The test parts were analyzed on behalf of the applicant as mixing sample in one testing. The above results were only given as the informality value and only for reference.

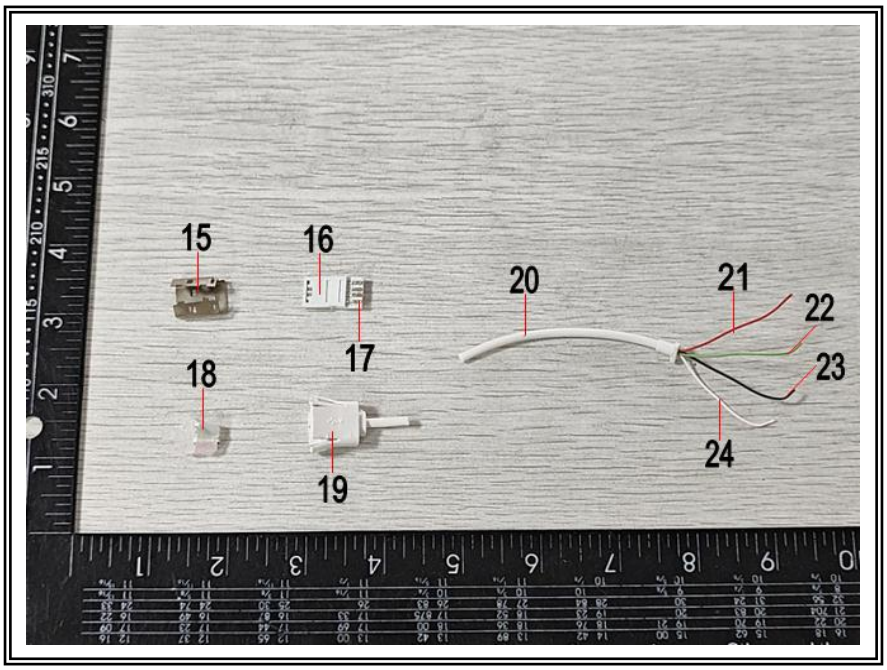
Sample photo(s):











GIG authenticate the photo(s) on original report only

******End of Report******