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Applicant: Mid Ocean Brands B.V.

Address: 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

The following sample(s) and sample information was/were submitted and identified by client as:

Sample Name: Wooden torch with COB light

Model: MO6695

**Receiving Date:** 24-Jul-2024, 30-Jul-2024

Test Period: From 24-Jul-2024 to 30-Jul-2024

Add Information: -

#### **Test Summary:**

#	Test Item(s)	Reference Standard/Method	Result
1	Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, DBP, BBP, DEHP and DIBP EU RoHS Directive 2011/65/EU and its amendment directives (EU) 2015/863 (RoHS)	IEC 62321-3-1:2013 IEC 62321-4:2013+A1:2017 IEC 62321-5:2013 IEC 62321-6:2015 IEC 62321-7-1:2015 IEC 62321-7-2:2017 IEC 62321-8:2017	PASS

Signed for and on behalf of ST

Mark Mai (Technical Director)

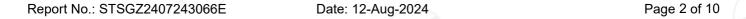
e-mail: stsgz@stsapp.com



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### Result:

# 1.1 EU RoHS Directive 2011/65/EU and its amendment directives on XRF IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Son No	Tested Part(s)	Results					
Seq. No.	rested Part(s)	Pb	Cd	Hg	Cr	Br	
1	Brown wood,shell	BL	BL	BL	BL	BL	
2	Transparent plastic,cover	BL	BL	BL	BL	BL	
3	Translucent soft plastic,button	BL	BL	BL	BL	BL	
4	Silvery metal,spring	BL	BL	BL	Х	NA	
5	Black plastic,button shell	BL	BL	BL	BL	BL	
6	Silvery metal,cover	BL	BL	BL	BL	NA	
7	Silvery metal,inner shell	BL	BL	BL	BL	NA	
8	Translucent dry glue	BL	BL	BL	BL	BL	
9	Silvery metal,gasket	BL	BL	BL	BL	NA	
10	Silvery metal,big gasket	BL	BL	BL	BL	NA	
11	Red soft plastic,wire jacket	BL	BL	BL	BL	BL	
12	Silvery metal,wire core	BL	BL	BL	BL	NA	
13	Blue soft plastic,wire jacket	BL	BL	BL	BL	BL	
14	Silvery metal,solder	BL	BL	BL	BL	NA	
15	Yellow body,LED	BL	BL	BL	BL	Х	
16	Green small PCB	BL	BL	BL	BL	Х	
17	White PCB	BL	BL	BL	BL	Х	
18	White plastic,cover	BL	BL	BL	BL	BL	
19	Black body,resistor	BL	BL	BL	BL	BL	
20	Black body ,audion	BL	BL	BL	BL	BL	
21	Brown body,capacitor	BL	BL	BL	BL	BL	
22	Silvery metal,solder	BL	BL	BL	BL	NA	
23	Green PCB	BL	BL	BL	BL	Х	

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#### Remark:

(1) Results were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Unit	Non-metal	Metal	Composite Material					
Cd	mg/kg	BL≤70-3σ< X <130+3σ≤OL	BL≤70-3σ< X <130+3σ≤OL	BL≤50-3σ< X <150+3σ≤OL					
Pb	mg/kg	BL≤700-3σ< X <1300+3σ≤OL	BL≤700-3σ< X <1300+3σ≤ OL	BL≤500-3σ< X <1500+3σ≤OL					
Hg	mg/kg	BL≤700-3σ< X <1300+3σ≤OL	BL≤700-3σ< X <1300+3σ≤OL	BL≤500-3σ< X <1500+3σ≤OL					
Cr	mg/kg	BL≤700-3σ< X	BL≤700-3σ< X	BL≤500-3σ< X					
Br	mg/kg	BL≤300-3σ< X		BL≤250-3σ< X					

#### Note:

BL = Below Limit

OL = Over Limit

X = Inconclusive

NA = Not Applicable

- (2) The XRF screening test for RoHS elements The reading may be different to the actual content in the sample be of non-uniformity composition.
- (3) The maximum permissible limit is quoted from the document 2011/65/EU and its amendment directives (EU) 2015/863:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)			
Cadmium (Cd)	100			
Lead (Pb)	1000			
Mercury (Hg)	1000			
Hexavalent Chromium (Cr(VI))	1000			
Polybrominated biphenyls (PBBs)	1000			
Polybrominated diphenyl ethers (PBDEs)	1000			

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#### (4) Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect(e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

- (5) The selection of test portions was recommended by the client and the conclusion of chemical test is only for the selected portions.
- (6) Materials #14 is the test results of the resubmitted sample.

#### 1.2 Hexavalent Chromium (Cr(VI))

Metal: IEC 62321-7-1:2015, extracted by boiling water and analyzed by UV-Vis Non-metal: IEC 62321-7-2:2017, alkaline digested and analyzed by UV-Vis

	Compound	Material	Limit	DI.
	Compound	4	Limit	RL
1	Hexavalent Chromium (Cr(VI))	Negative	#	-
	Conclusion	PASS	-	-

Remark(s) (a) ug/cm<sup>2</sup>: microgram per square centimeter

(b) RL: Report Limit

## 1.3 Polybrominated Biphenyls and Polybrominated Diphenyl Ethers (PBBs and PBDEs) IEC 62321-6:2015, solvent extract and determined by GC/MS

Compound		Material				Limit	RL
		15	16	17	23	(mg/kg)	(mg/kg)
1	Monobromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
2	Dibromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
3	Tribromo biphenyl	N.D.	N.D.	N.D.	N.D.	- /	50
4	Tetrabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
5	Pentabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
6	Hexabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50

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<sup>(</sup>c) Negative = Sample Cr(VI) concentration is less than 0.10 ug/cm<sup>2</sup>

Positive = Sample Cr(VI) concentration is greater than 0.13 ug/cm<sup>2</sup>

(d) # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as conflict with RoHS requirement.

Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as no conflict with RoHS requirement.



# **REPORT**

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	Conclusion	PASS	PASS	PASS	PASS	-	-
22	Sum of PBDEs	N.D.	N.D.	N.D.	N.D.	1000	-(
21	Sum of PBBs	N.D.	N.D.	N.D.	N.D.	1000	-
20	Decabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
19	Nonabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
18	Octabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
17	Heptabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
16	Hexabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
15	Pentabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	/ <u>-</u>	50
14	Tetrabromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
13	Tribromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
12	Dibromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
11	Monobromo diphenyl ether	N.D.	N.D.	N.D.	N.D.	-	50
10	Decabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
9	Nonabromo biphenyl	N.D.	N.D.	N.D.	N.D.	-	50
8	Octabromo biphenyl	N.D.	N.D.	N.D.	N.D.		50
7	Heptabromo biphenyl	N.D.	N.D.	N.D.	N.D.	(-/	50

Remark(s): (a) mg/kg: milligram per kilogram (b) RL: Report limit (c) N.D.: Not detected (result is less than RL)

Phthalates – (DBP, BBP, DEHP, DIBP) IEC 62321-8:2017, Solvent extract and determined by GC/MS

Compound		Material				Limit (%)	RL(%)		
	Compound		1	2+5	3+11+13	8	LIIIII (76)	RL(%)	
	1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005

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	Conclusion		PASS	PASS	PASS	PASS	-	-
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005

	Compound		Material				Limit (0/)	DI (0/)
			15 16+17+23 18 19+20		19+20+21	Limit (%)	RL(%)	
1	DBP	Dibutylphthalate CAS# 84-74-2	N.D.	N.D.	N.D.	N.D.	0.1	0.005
2	BBP	Benzylbutylphthalate CAS# 85-68-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
3	DEHP	Diethylhexylphthalate CAS# 117-81-7	N.D.	N.D.	N.D.	N.D.	0.1	0.005
4	DIBP	Diisobutyl phthalate CAS# 84-69-5	N.D.	N.D.	N.D.	N.D.	0.1	0.005
	Conclusion		PASS	PASS	PASS	PASS	-	-

Remark(s): (a) RL: Report limit (b) N.D.: Not detected (result is less than RL)

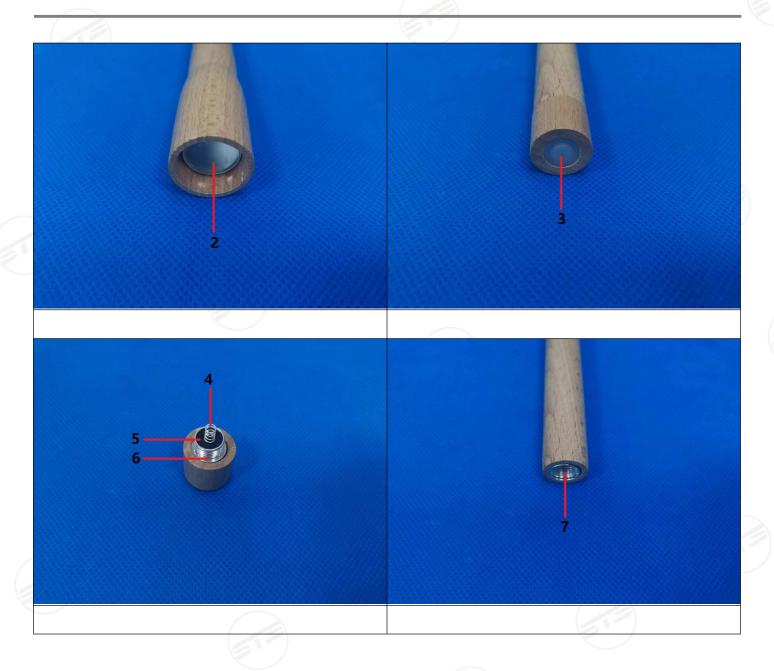
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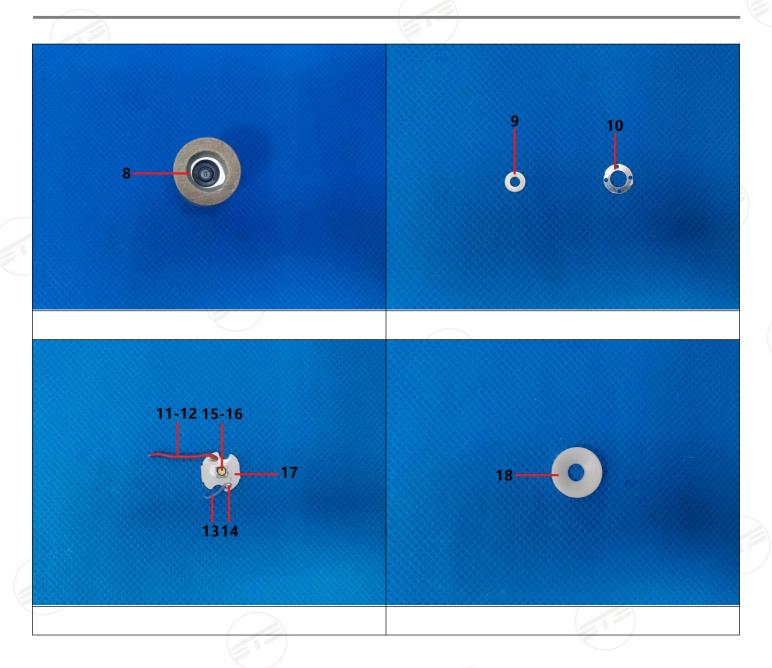
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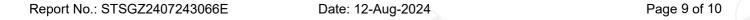
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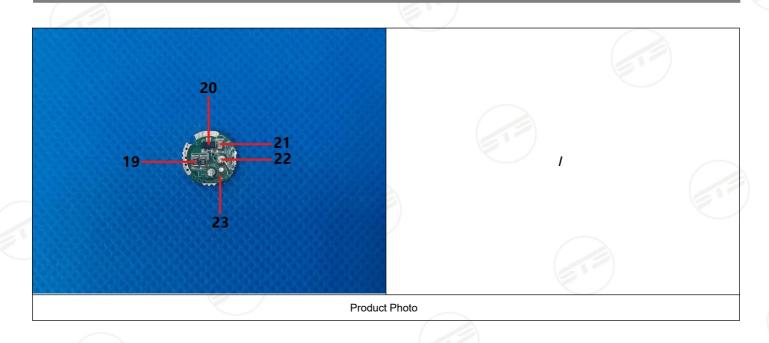


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