

TEST REPORT

APPLICANT

: Xindao B.V.

ADDRESS

: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

SAMPLE DESCRIPTION

: 3W pocket CREE torch

ITEM NO.

: P513.57

COUNTRY OF ORIGIN

: China

COUNTRY OF DESTINATION

: EUROPE

SAMPLE RECEIVED DATE

: 13-Aug-2018

TURN AROUND TIME

: 13-Aug-2018 to 21-Aug-2018

TEST SPECIFICATION

: Total concentration of Lead, Cadmium, Mercury, Chromium VI, Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) in Electrical and Electronic Equipment in accordance with EC Directive 2011/65/EU (RoHS)

CONCLUSION

: Based on the analysis on the submitted sample(s), the test results do comply with the concentration limits as specified in Annex II to Directive 2011/65/EU.

***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins Product Testing Service (Shanghai) Co., Ltd



Joyce Liu
Lab Manager

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SAMPLE PHOTO



EFSH18080182-CG-01

TO BE CONTINUED

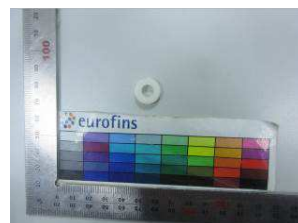
COMPONENT PHOTO(S)



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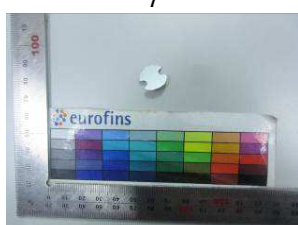
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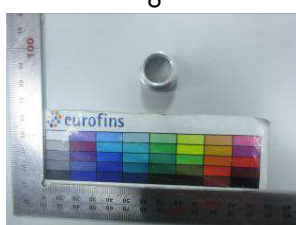
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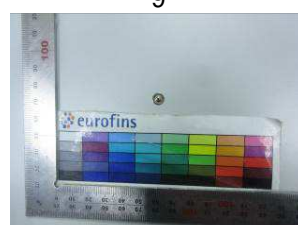
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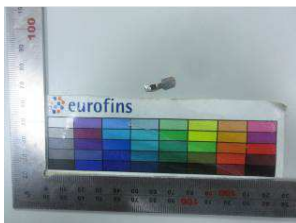
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TO BE CONTINUED

COMPONENT PHOTO(S)



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TO BE CONTINUED

TEST RESULT

A. Screening Test by XRF Spectroscopy

As specified by client, to analyze the contents of Lead, Cadmium, Mercury, Chromium, Bromine in the submitted sample by XRF. Screening limits in mg/kg for regulated elements in various matrices according to IEC 62321-3-1:2013 Ed.1

No.	Component	Test Results (mg/kg)				
		Cd	Pb	Hg	Cr	Br
		Limit (mg/kg)				
		100	1000	1000	Cr(VI): 1000	PBB:1000 PBDE:1000
1	White plastic block 1	ND	ND	ND	ND	ND
2	White plastic block 2	ND	ND	ND	ND	ND
3	White plastic block 3	ND	ND	ND	101	ND
4	Black rubber block	ND	ND	ND	ND	ND
5	Black rubber ring	47	ND	ND	ND	ND
6	Blue rubber wire sheath	18	ND	122	420	ND
7	Transparent plastic block	ND	ND	ND	ND	ND
8	Circuit board	ND	ND	ND	ND	NC
9	Silver metal soldering tin	ND	ND	ND	NC	NA
10	Silver metal block 1	ND	ND	ND	NC	NA
11	Silver metal block 2	ND	ND	ND	NC	NA
12	Silver metal block 3	ND	108	ND	NC	NA
13	Silver metal ring	ND	156	ND	NC	NA
14	Black metal block 1	ND	ND	ND	NC	NA
15	Black metal block 2	ND	ND	ND	NC	NA
16	Black metal block 3	ND	ND	ND	NC	NA
17	Black metal block 4	ND	ND	ND	NC	NA
18	Black metal block 5	ND	ND	ND	NC	NA
19	Silver metal sheet 1	ND	ND	ND	NC	NA
20	Silver metal sheet 2	ND	ND	ND	NC	NA
21	Golden metal spring	ND	ND	ND	NC	NA
22	Golden metal screw	16	ND	ND	NC	NA
23	Copper metal wire	ND	336	ND	NC	NA

TO BE CONTINUED

TEST RESULT

Abbreviation:	Pb	denotes Lead
	Cd	denotes Cadmium
	Hg	denotes Mercury
	Cr	denotes Chromium
	Cr(VI)	denotes Chromium(VI)
	Br	denotes Bromine
	PBBs	denotes Total Polybrominated Biphenyls
	PBDEs	denotes Total Polybrominated Diphenyl Ethers
	NA	denotes Not Applicable
	ND	denotes Not Detected (Cd<10mg/kg, Pb/ Hg/ Cr<100mg/kg, Br<300mg/kg)
	NC	denotes Not Conclusive

XRF Screening limits for different materials:

Element	Polymers	Metals	Composite Material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	/	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Note:

BL= Below limit

X = The region where further investigation is necessary

OL = Over limit

3σ = The repeatability of the analyzer at the action level

LOD = Limit of detection

XRF testing results are only used for reference.

TO BE CONTINUED

TEST RESULT

B. Confirmation Test by Wet Chemistry

Tested Item(s)	Test Method	Measured Equipment	MDL
Lead (Pb) /Cadmium (Cd)	IEC 62321-5:2013 Ed.1	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2013 Ed.1	ICP-OES	2 mg/kg
Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015 Ed.1	UV-Vis	0.01 μ g/cm ²
	IEC62321-7-2:2017		2 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6: 2015 Ed.1	GC-MS	50 mg/kg
Polybrominated DiphenylEthers (PBDEs)			

Component No.	Boiling-water-extraction for Cr(VI) (*1)
9	Negative
10	Negative
11	Negative
12	Negative
13	Negative
14	Negative
15	Negative
16	Negative
17	Negative
18	Negative
19	Negative
20	Negative
21	Negative
22	Negative
23	Negative

Remark:

(*1) The screening result of Chromium(VI) was found in the inconclusive region, Thus the Chromium(VI) content in surface layer have been confirmed with reference to IEC 62321-7-1:2015.

Negative – The Cr(VI) concentration is below 0.10 μ g/cm².The coating is considered a non-Cr(VI) based coating.

TO BE CONTINUED

TEST RESULT

Component No.	Test Results (mg/kg)					
	Cd	Pb	Hg	Cr (VI)	PBBs	PBDEs
	Limit (mg/kg)					
	100	1000	1000	1000	1000	1000
8	-	-	-	-	ND	ND

Note:

The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

MDL = method detection limit

ND = not detected (<MDL)

mg/kg = ppm = parts per million

µg/cm² = micrograms per square centimeter

*** END OF THE REPORT ***