

TEST REPORT

APPLICANT : Xindao B.V.

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

SAMPLE DESCRIPTION : 3W medium CREE torch

ITEM NO. : P513.56

COUNTRY OF ORIGIN : China

COUNTRY OF DESTINATION : Europe

SAMPLE RECEIVED DATE : 13-Aug-2018

TURN AROUND TIME : 13-Aug-2018 to 28-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.

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant

***** 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



EFSH18080181-CG-02

TO BE CONTINUED

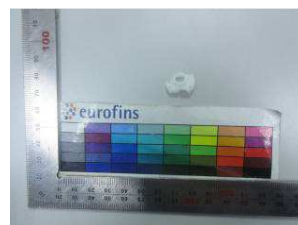
COMPONENT PHOTO(S)



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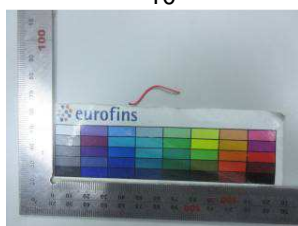
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TO BE CONTINUED

COMPONENT PHOTO(S)



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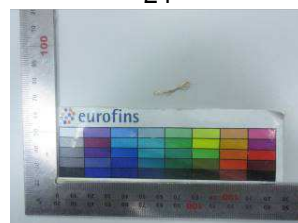
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TO BE CONTINUED

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	175	ND
4	Transparent plastic block 1	ND	ND	ND	ND	ND
5	Transparent plastic block 2	ND	ND	ND	ND	ND
6	Ivory plastic block	ND	ND	ND	ND	ND
7	Black rubber ring	ND	ND	ND	291	ND
8	Black plastic block	ND	ND	ND	ND	ND
9	Black rope	ND	ND	ND	133	ND
10	Black line	ND	ND	ND	ND	ND
11	Black rubber block	ND	ND	ND	105	ND
12	Blue rubber wire sheath	39	ND	ND	ND	ND
13	Red rubber wire sheath	ND	ND	ND	ND	ND
14	Silver plastic block	ND	ND	ND	ND	ND
15	Circuit board	ND	ND	ND	ND	NC
16	Silver metal soldering tin	ND	ND	ND	NC	NA
17	Golden metal sheet 1	ND	NC	ND	NC	NA
18	Golden metal sheet 2	ND	ND	ND	NC	NA
19	Silver metal block 1	ND	ND	ND	NC	NA
20	Silver metal block 2	ND	ND	ND	NC	NA
21	Silver metal block 3	ND	ND	ND	NC	NA
22	Silver metal spring 1	ND	ND	ND	NC	NA
23	Silver metal spring 2	ND	ND	ND	NC	NA
24	Silver metal sheet	ND	ND	ND	NC	NA
25	Golden metal block	ND	ND	ND	NC	NA
26	Silver metal screw	ND	ND	ND	NC	NA
27	Copper metal wire	22	ND	ND	NC	NA
28	Black metal block 1	ND	ND	ND	NC	NA
29	Black metal block 2	ND	ND	ND	NC	NA
30	Black metal block 3	ND	ND	ND	NC	NA
31	Black metal block 4	ND	ND	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 $\mu\text{g}/\text{cm}^2$
	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)
16	Negative
17	Negative
18	Negative
19	Negative
20	Negative
21	Negative
22	Negative
23	Negative
24	Negative
25	Negative
26	Negative
27	Negative
28	Negative
29	Negative
30	Negative
31	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 $\mu\text{g}/\text{cm}^2$.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
15	-	-	-	-	ND	ND
17	-	260	-	-	-	-

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

$\mu\text{g}/\text{cm}^2$ = micrograms per square centimeter

*** END OF THE REPORT ***