

## Test Report

No. C190603074002

Date: Jun 12, 2019

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Applicant: Paul Stricker, SA

Applicant Address: Núcleo Ind. Murtede, Lt 5, 3060-372 Murtede, Portugal

The following samples were submitted and identified on behalf of the clients as

Sample Name: LED flashlight

Model:

BTC808,BTC842,BTC801,BTC801-1,BTC802,BTC803,BTC804,BTC805,BTC806,BTC809,BTC810,BTC817,BTC819,BTC123,BTC311,BTC824,BTC901,BTC902,BTC903,BTC904,BTC905,BTC906,BTC907,BTC908,BTC909,BTC910,BTC911,BTC912,BTC913,BTC914,BTC915,BTC916,BTC917,BTC918,BTC919

Model/Type reference: N.A.

Trademark: N.A.

Manufacturer:

Manufacturer Address:

CPST Internal Reference No.: C190603074002

Sample Received Date: Jun 03, 2019

Number of Sample Received: 01 pcs

Test Period: Jun 03, 2019 to Jun 12,

Test Method: 2019 Please refer to next

Test Result: pages Please refer to next  
pages



Signed for and on behalf of  
Euron Consumer Products Testing Service Co., Ltd

TESTED BY :

REVIEWED BY:

APPROVED BY:

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Project Leader

*Sunshine Liu*

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### CONCLUSION :

<u>TESTED SAMPLES</u>	<u>TEST ITEM</u>	<u>RESULT</u>
	1. RoHS Directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102	
LED flashlight	— Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content	<b>PASS</b>
	—Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate(DIBP) Content	<b>PASS</b>

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### Test Item Description And Photo List

Sample No.	Description	Photograph
001	Silver magnet	
002	Colorless transparent plastic	
003	LED light colorless transparent plastic	
004	Silver metal pin	
005	Silver metal ring	
006	Green PCB board	
007	Silver solder	
008	Silver metal spring	
009	Black coating	
010	Silver metal (shell)	
011	Black silicone button	
012	Black plastic	
013	Silver metal disc	
014	White plastic	
015	White plastic	
016	Silver metal plate	
017	silvery metal	
018	Black metal spring	
019	Silver wire	
020	Silver metal rod	
021	Silver metal shell	
022	Silver metal plate	
023	Silver magnet	
024	silvery metal	

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### Test Results

#### Screening test for the specified hazardous substances of RoHS for the selected materials of the submitted sample:

- Heavy Metal (Cadmium, Chromium, Mercury, Lead) Content Test
- Bromine Content Test

According to IEC 62321-3-1:2013, and Quantification analyzed with Energy Dispersive X-ray Fluorescence Spectrometers.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
Sample 001	BL	BL	BL	BL	BL
Sample 002	BL	BL	BL	BL	BL
Sample 003	BL	BL	BL	BL	BL
Sample 004	BL	BL	BL	BL	N.A.
Sample 005	BL	BL	BL	BL	N.A.
Sample 006	BL	BL	BL	BL	Inconclusive^
Sample 007	BL	BL	BL	BL	N.A.
Sample 008	BL	BL	BL	BL	N.A.
Sample 009	BL	BL	BL	BL	BL
Sample 010	BL	BL	BL	BL	N.A.
Sample 011	BL	BL	BL	BL	BL
Sample 012	BL	BL	BL	BL	BL
Sample 013	BL	BL	BL	BL	N.A.
Sample 014	BL	BL	BL	BL	BL
Sample 015	BL	BL	BL	BL	BL
Sample 016	BL	BL	BL	BL	N.A.
Sample 017	BL	BL	BL	BL	N.A.
Sample 018	BL	BL	BL	BL	N.A.
Sample 019	BL	BL	BL	BL	N.A.
Sample 020	BL	BL	BL	BL	N.A.
Sample 021	BL	BL	BL	BL	N.A.
Sample 022	BL	BL	BL	BL	N.A.
Sample 023	BL	BL	BL	BL	BL
Sample 024	BL	BL	BL	BL	N.A.

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### Note:

1. All Concentrations express in "mg/kg" (milligram per kilogram), mg/kg ~ ppm
2. "OL" denotes "over limit"
3. "BL" denotes "below limit"
4. "N.A." denotes "Not Applicable"
5. "Inconclusive" denotes result is intermediate between "OL" and "BL"
6. "A" denotes the screening result was inconclusive(X) or over limit (OL), thus further confirmation test was conducted, results are listed in 3.2 and 3.3.

XRF screening limits for different materials:

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
<b>Metal</b>	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	N.A.
<b>Polymers</b>	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (300-3\sigma) < X$
<b>Composite material</b>	$BL \leq (50-3\sigma) < X < (150+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (250-3\sigma) < X$

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### 3.2 Test for Heavy Metals

– Lead, Cadmium, Hexavalent Chromium and Mercury Tests according to IEC 62321-4:2013+A1:2017 & IEC 62321-5:2013 & IEC 62321-7-1:2015 & IEC 62321-7-2:2017

Element	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Hexavalent Chromium [μg/cm <sup>2</sup> ]	Hexavalent Chromium [mg/kg]
Detection Limit	5	5	5	0.10	5
Limit	100	1000	1000	0.10	1000

Note:

1. All Concentrations express in “mg/kg”(milligram per kilogram), mg/kg ~ ppm.
2. “N.D.” = “Not Detected”.
3. Boiling-water-extraction:  
Negative = Absence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is less than 0.10μg with 1cm<sup>2</sup> sample surface area.  
Positive = Presence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is greater than 0.13μg with 1cm<sup>2</sup> sample surface area.  
Inconclusive = the detected concentration in boiling-water-extraction solution is greater than 0.10μg and less than 0.13μg with 1cm<sup>2</sup> sample surface area.
4. Positive = result be regarded as not comply with RoHS requirement  
Negative = result be regarded as comply with RoHS requirement
5. “-” = Not regulated

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### 3.3 Test for Flame retardants

– Test Method: With reference to IEC 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5mg/kg]

Test Item		Result [mg/kg]	RoHS Requirement [mg/kg]
		Sample 006	
PBBs	Monobromobiphenyl	< 5	Sum of PBBs < 1000
	Dibromobiphenyl	< 5	
	Tribromobiphenyl	< 5	
	Tetrabromobiphenyl	< 5	
	Pentabromobiphenyl	< 5	
	Hexabromobiphenyl	< 5	
	Heptabromobiphenyl	< 5	
	Octabromobiphenyl	< 5	
	Nonabromobiphenyl	< 5	
	Decabromobiphenyl	< 5	
	Sum of PBBs	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	Sum of PBDEs < 1000
	Dibromodiphenyl Ether	< 5	
	Tribromodiphenyl Ether	< 5	
	Tetrabromodiphenyl Ether	< 5	
	Pentabromodiphenyl Ether	< 5	
	Hexabromodiphenyl Ether	< 5	
	Heptabromodiphenyl Ether	< 5	
	Octabromodiphenyl Ether	< 5	
	Nonabromodiphenyl Ether	< 5	
	Decabromodiphenyl Ether	< 5	
	Sum of PBDEs	< 5	

Note:

1. All Concentrations express in “mg/kg” (milligram per kilogram), mg/kg ~ ppm.
2. “<” denotes less than

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### Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) Content—RoHS Directive 2011/65/EU Annex II amending Annex (EU)2017/2102

Test method: With reference to IEC 62321-8:2017; Analysis was conducted by GC-MS.

Element	Di-(2-ethylhexyl) phthalate (DEHP) [mg/kg]	Benzylbutyl phthalate (BBP) [mg/kg]	Dibutyl phthalate (DBP) [mg/kg]	Diisobutyl phthalate(DIBP) [mg/kg]
<b>Detection Limit</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>Limit</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>
Sample 001	N.D.	N.D.	N.D.	N.D.
Sample 002	N.D.	N.D.	N.D.	N.D.
Sample 003	N.D.	N.D.	N.D.	N.D.
Sample 006	N.D.	N.D.	N.D.	N.D.
Sample 009	N.D.	N.D.	N.D.	N.D.
Sample 011	N.D.	N.D.	N.D.	N.D.
Sample 012	N.D.	N.D.	N.D.	N.D.
Sample 014	N.D.	N.D.	N.D.	N.D.
Sample 015	N.D.	N.D.	N.D.	N.D.
Sample 023	N.D.	N.D.	N.D.	N.D.

Note:

1. All Concentrations express in “mg/kg”(milligram per kilogram), mg/kg ~ ppm.
2. “N.D.” = “Not Detected”.

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### Photo of the Submitted Sample



Declaration: Report C190603074002 was copy all of the sample testing data from Report C190603074001

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

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