



**BUREAU  
VERITAS**

# TEST REPORT

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DATE : Jun 15, 2020  
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**APPLICANT** : **FLASHBAY ELECTRONICS**  
XIFENGCHENG INDUSTRIAL PARK, FUHAI STREET,  
BAOAN DISTRICT SHENZHEN CITY

**DATE OF SUBMISSION** : JUN 5, 2020

**TEST PERIOD** : JUN 5, 2020 TO JUN 15, 2020

**SAMPLE DESCRIPTION** : CRYSTAL-CY

Sample Size: 4



BUREAU VERITAS SHENZHEN CO.,LTD  
DONGGUAN BRANCH

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RT/Man Ou

## **REMARK**

If there are questions or concerns on this report, please contact the following persons:

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**SUMMARY OF TEST RESULTS**

<b>TEST REQUESTED</b>	<b>CONCLUSION</b>	<b>REMARK</b>
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU	PASS	-

Photo of the Submitted Sample



**Test Item Description and Photo List**

<b>Test Item(s)</b>	<b>Sample Photo</b>	<b>Item / Component Description(s)</b>	<b>Location(s)</b>	<b>Style(s)</b>
I001		Silvery metal	Contact plate	-
I002		Off-white plastic	Connector	-
I003		Golden/black PCB	PCB	-
I004		Silvery solder	Solder, PCB	-
I005		Yellow body	SMD LED, FPC	-
I006		Brown FPC	FPC	-
I007		Transparent plastic	Film	-
I008		Transparent glass	Handle	-



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### TEST RESULT

#### Compliance Test – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result						
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs	PBDEs	Conclusion
Unit	mg/kg						-
Test Item(s)	-	-	-	-	-	-	-
I001	ND	ND	ND	ND	NA	NA	PASS
I002	ND	ND	ND	ND	ND	ND	PASS
I003	ND	ND	ND	ND	ND	ND	PASS
I004	ND	ND	ND	ND	NA	NA	PASS
I005	ND	ND	ND	ND	ND	ND	PASS
I006	ND	ND	ND	ND	ND	ND	PASS
I007	ND	ND	ND	ND	ND	ND	PASS
I008	ND	ND	ND	ND	ND	ND	PASS

Note / Key:

ND = Not detected  
NR = Not requested  
NA = Not applicable  
Detection Limit : See Appendix.

“>” = Greater than  
mg/kg = milligram(s) per kilogram = ppm = part(s) per million  
% = percent

“<” = Less than  
10000 mg/kg = 1 %

Remark:

- The testing approach is listed in table of Appendix.
- According to European Council Directive 2011/65/EU, Article 5 “Adaptation of the Annexes to scientific and technical progress”, exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.

**APPENDIX**

<b>List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit</b>							
<b>[ Compliance Test for European Parliament and Council Directive 2011/65/EU ] :</b>							
<b>No.</b>	<b>Name of Analytes</b>	<b>Detection Limit (mg/kg)</b>				<b>Wet Chemistry</b>	<b>Maximum Allowable Limit (mg/kg)</b>
		<b>X-ray fluorescence (XRF)<sup>[a]</sup></b>					
		<b>Plastic</b>	<b>Metallic / glass / ceramic</b>	<b>Others</b>			
1	Lead (Pb)	100	200	200	10 <sup>[b]</sup>	1000	
2	Cadmium (Cd)	50	50	50	10 <sup>[b]</sup>	100	
3	Mercury (Hg)	100	200	200	10 <sup>[c]</sup>	1000	
4	Chromium (Cr)	100	200	200	NA	NA	
5	Chromium VI (Cr VI)	NA	NA	NA	3 <sup>[g, h]</sup> / 10 <sup>[d]</sup> / Sec <sup>[e, i]</sup>	1000 / Negative <sup>[j]</sup>	
6	Bromine (Br)	200	NA	200	NA	NA	
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	NA	NA	NA	Each 50 <sup>[f]</sup>	Sum 1000	
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 <sup>[f]</sup>	Sum 1000	



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**List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [ Compliance Test for European Parliament and Council Directive 2011/65/EU ] :**

NA = Not applicable

- [a] Test method with reference to International Standard IEC 62321-3-1: 2013.
- [b] Test method with reference to International Standard IEC 62321-5: 2013.
- [c] Test method with reference to International Standard IEC 62321-4:2013+A1:2017.
- [d] Polymers and Electronics - Test method with reference to International Standard IEC 62321-7-2:2017.
- [e] Metal - Test method with reference to International Standard IEC 62321-7-1: 2015.
- [f] Test method with reference to International Standard IEC 62321-6: 2015.
- [g] Leather - Test method International Standard ISO 17075-1:2017.
- [h] Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075-1:2017.
- [i] The principle of this method was evaluated and supported by two studies organized by IEC TC 111 WG3. These studies were focused on detecting the presence of Cr VI in the corrosion protection coatings on metallic samples. Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
- [j]

**Testing Approach [ Compliance Test for European Parliament and Council Directive 2011/65/EU ] :**

The testing approach was with reference to the following document(s).

- 1 International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
- 2 "RoHS Enforcement Guidance Document Version 1" by EU RoHS Enforcement Authorities Informal Network. (May 2006)
- 3 "RoHS Regulations - Government Guidance Notes" by United Kingdom Department for Business Innovation & Skills. (February 2011)
- 4 "Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)



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### TEST RESULT

**BBP/DBP/DEHP/DIBP Content – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU**

Test Method : With reference to International Standard IEC 62321-8:2017

Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)	Result (%)				Conclusion
I002+I003+I006	ND	ND	ND	ND	PASS
I007	ND	ND	ND	ND	PASS

Note / key:

BBP = Butyl benzyl phthalate (CAS No: 85-68-7)

DBP = Dibutyl phthalate (CAS No: 84-74-2)

DEHP = Di(2-ethylhexyl) phthalate (CAS No: 117-81-7)

DiBP = Diisobutyl phthalate (CAS No: 84-69-5)

ND = Not detected % = percent

10000 mg/kg = 1 %

mg/kg = milligram(s) per kilogram

Detection Limit (%) : Each 0.005

Remark:

- The amendment will be effective on 22 July 2019. For medical devices and control instruments, effective date will be 22 July 2021.

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