



**BUREAU
VERITAS**

TEST REPORT

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DATE : Jan 5, 2018
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APPLICANT : **FLASHBAY ELECTRONICS**
BLGD B & C XI FENG CHENG IND ZONE, NO.2 FUYUAN
ROAD HE PING, VILLAGE, FUYONG TOWN, SHENZHEN

DATE OF SUBMISSION : DEC 25, 2017

TEST PERIOD : DEC 25, 2017 TO JAN 5, 2018

SAMPLE DESCRIPTION : USB FLASH DRIVE

Style No. : TWISTER GO (TG)

Sample Size: 2

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

Harvey Xue
Manager, Analytical Lab

RT/JC/LL

REMARK

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

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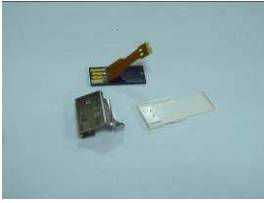
SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)	PASS	-
Phthalates Test – Directive 2015/863/EU Amendment of European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) (Note: The amendment will be effective on 22 July 2019. For medical devices and control instruments, effective date will be 22 July 2021.)	PASS	-

Photo of the Submitted Sample



Test Item Description and Photo List

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
I001		Silvery metal	Housing, USB flash drive	-
I002		Silvery metal	Ring, housing, USB flash drive	-
I003		White plastic	Housing, USB flash drive	-
I004		White plastic	Lid, housing, USB flash drive	-
I005		Grey soft plastic	Elastic cord, housing, USB flash drive	-
I006		Silvery metal	Cover, micro USB plug, PCB, USB flash drive	-
I007		Silvery metal	Contact plate, micro USB plug, PCB, USB flash drive	-
I008		Silvery metal	Pin, micro USB plug, PCB, USB flash drive	-
I009		Golden metal	Pin, micro USB plug, PCB, USB flash drive	-
I010		Black plastic	Pin holder, micro USB plug, PCB, USB flash drive	-
I011		Black body	SMD resistor, PCB, USB flash drive	-
I012		Silvery solder	Solder, PCB, USB flash drive	-
I013		Green coated brown plastic with silvery metal	PCB, USB flash drive	-
I014		White plastic	Frame, PCB, USB flash drive	-
I015		Silvery metal	Contact plate, USB plug, PCB, USB flash drive	-
I016		Brown plastic with copper metal	Data wire, PCB, USB flash drive	-
I017		Silvery solder	Solder, data wire, USB plug, PCB, USB flash drive	-
I018		Black plastic with copper metal	Board, USB plug, PCB, USB flash drive	-
I019		White plastic	Frame, PCB, USB flash drive	-



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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)

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	Negative*	NA	NA	PASS
I002	ND	ND	ND	Negative*	NA	NA	PASS
I003	ND	ND	ND	ND	ND	ND	PASS
I004	ND	ND	ND	ND	ND	ND	PASS
I005	ND	ND	ND	ND	ND	ND	PASS
I006	ND	ND	ND	Negative*	NA	NA	PASS
I007	ND	ND	ND	Negative*	NA	NA	PASS
I008	ND	ND	ND	Negative*	NA	NA	PASS
I009	ND	ND	ND	ND	NA	NA	PASS
I010	ND	ND	ND	ND	ND	ND	PASS
I011	ND	ND	ND	ND	ND	ND	PASS
I012	ND	ND	ND	ND	NA	NA	PASS
I013	ND	ND	ND	ND	ND*	ND*	PASS
I014	ND	ND	ND	ND	ND	ND	PASS
I015	ND	ND	ND	ND	NA	NA	PASS
I016	ND	ND	ND	ND	NA	NA	PASS
I017	ND	ND	ND	ND	NA	NA	PASS
I018	ND	ND	ND	ND	NA	NA	PASS
I019	ND	ND	ND	ND	ND	ND	PASS



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Note / Key:

ND = Not detected	“>” = Greater than	“<” = Less than
NR = Not requested	mg/kg = milligram(s) per kilogram = ppm = part(s) per million	
NA = Not applicable	% = percent	10000 mg/kg = 1 %
Detection Limit : See Appendix.		

Remark:

- The testing approach is listed in table of Appendix.
 - * denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
 - 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.
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APPENDIX

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] :							
No.	Name of Analytes	Detection Limit (mg/kg)				Wet Chemistry	Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF)^[a]					
		Plastic	Metallic / glass / ceramic	Others			
1	Lead (Pb)	100	200	200	10 ^[b]	1000	
2	Cadmium (Cd)	50	50	50	10 ^[b]	100	
3	Mercury (Hg)	100	200	200	10 ^[c]	1000	
4	Chromium (Cr)	100	200	200	NA	NA	
5	Chromium VI (Cr VI)	NA	NA	NA	3 ^[g, h] / 10 ^[d] / Sec ^[e, i]	1000 / Negative ^[j]	
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 ^[f]	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 ^[f]	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.
- [d] Polymers and Electronics - Test method with reference to European Standard EN 62321: 2009, Annex C.
- [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 Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments

Test Method : Sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer. _

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
I001		-	-

Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)	Result (%)				Conclusion
I003+I004+I010	ND	ND	ND	ND	PASS
I005	ND	ND	ND	ND	PASS
I013+I014+I016	ND	ND	ND	ND	PASS
I018+I019	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 ***