



**BUREAU
VERITAS**

TEST REPORT

LAB NO. : (8815)362-0107
DATE : Jan 7, 2016
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APPLICANT : **PARTICLE INDUSTRIES, INC.**
1400 TENNESSEE ST., #4 SAN FRANCISCO, CA 94107

DATE OF SUBMISSION : Dec 28, 2015

TEST PERIOD : Dec 28, 2015 to Jan 7, 2016

SAMPLE DESCRIPTION : WIFI INTERNET OF THINGS DEVELOPMENT KIT/ WIFI 物连
网开发套件

Style No. : PHOTONH, PHOTONNOH, PHOTONKIT

Manufacturer : PARTICLE INDUSTRIES, INC

Country of Origin: CHINA

Country of Destination: 欧洲, 日本, 美国

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

Harvey Xue
Assistant Manager, Analytical Lab

RT/DL

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	-

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		Blue coated white plastic	Round, sticker, packing, WiFi kit	-
I002		White paper	Backing, round sticker, packing, WiFi kit	-
I003		White printed translucent plastic	Box, packing, WiFi kit	-
I004		Transparent plastic	Film, box, packing, WiFi kit	-
I005		White paper	Adhesive tape, box, packing, WiFi kit	-
I006		Shine black coated white paper	Box, packing, WiFi kit	-
I007		White/black printed grey paper board	Frame, box, packing, WiFi kit	-
I008		Black soft plastic	Foam, gasket, box, packing, WiFi kit	-
I009		Silver grey/transparent plastic	Bag, packing, WiFi kit	-
I010		Multi- color coated white paper board	Instruction, packing, WiFi kit	-
I011		Black printed white paper	Bar code, packing, WiFi kit	-
I012		Yellow paper	Backing, double side adhesive tape, packing, WiFi kit	-
I013		White soft plastic	Double side adhesive tape, packing, WiFi kit	-
I014		Black soft plastic	Foam, gasket, big box, packing, WiFi kit	-
I015		White coated laminated natural color paper board	Big box, packing, WiFi kit	-
I016		Black printed white plastic	Long, label "CE", big box, packing, WiFi kit	-
I017		Black printed white plastic	Short, bar code "photon", big box, packing, WiFi kit	-

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	ND	ND	ND	PASS
I002	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	PASS
I007	ND	ND	ND	ND	ND	ND	PASS
I008	ND	ND	ND	ND	ND	ND	PASS
I009	ND	ND	ND	ND	ND	ND	PASS
I010	ND	ND	ND	ND	ND	ND	PASS
I011	ND	ND	ND	ND	ND	ND	PASS
I012	ND	ND	ND	ND	ND	ND	PASS
I013	ND	ND	ND	ND	ND	ND	PASS
I014	ND	ND	ND	ND	ND	ND	PASS
I015	ND	ND	ND	ND	ND	ND	PASS
I016	ND	ND	ND	ND	ND	ND	PASS
I017	ND	ND	ND	ND	ND	ND	PASS

Note / Key:

ND = Not detected

NA = Not applicable

% = percent

Detection Limit : See Appendix.

“>” = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

10000 mg/kg = 1 %

“<” = Less than



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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)				Maximum Allowable Limit (mg/kg)
		X-ray fluorescence (XRF) ^[a]			Wet Chemistry	
		Plastic	Metallic / glass / ceramic	Others		
1	Lead (Pb)	100	200	200	10 ^[b]	1 000
2	Cadmium (Cd)	50	50	50	10 ^[b]	100
3	Mercury (Hg)	100	200	200	10 ^[c]	1 000
4	Chromium (Cr)	100	200	200	NA	NA
5	Chromium VI (Cr VI)	NA	NA	NA	3 ^[g, h] / 10 ^[d] / See ^[e, i]	1 000 / 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 1 000
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 1 000



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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 European Standard EN 62321: 2009, Annex B ^[i] .
[f]	Test method with reference to European Standard EN 62321: 2009, Annex A.
[g]	Leather - Test method International Standard ISO 17075: 2007.
[h]	Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075: 2007.
[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
[j]	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).

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) |

*** End of Report ***