



**BUREAU
VERITAS**

TEST REPORT

LAB NO. : (8817)334-0038
DATE : Dec 6, 2017
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APPLICANT : **PARTICLE INDUSTRIES, INC**
126 POST ST, 4TH FLOOR, SAN FRANCISCO, CA 94108,
USA

DATE OF SUBMISSION : NOV 30, 2017

TEST PERIOD : NOV 30, 2017 TO DEC 6, 2017

SAMPLE DESCRIPTION : E31M

Style No. : U201

Sample Size: 1

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	-

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

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RT/NL/LL

REMARK

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

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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		White/black coated brown plastic	Sticker, cover, small PCB, E31M	-
I002		Silvery metal	Cover, small PCB, E31M	-
I003		Black body	Biggest IC "PMB9813", small PCB, E31M	-
I004		Silvery/golden body	Big EC "A75", small PCB, E31M	-
I005		Silvery/golden body	Small EC "26,000", small PCB, E31M	-
I006		Black body	Big IC "5712", small PCB, E31M	-
I007		Black body	Bigger IC "RFMD", small PCB, E31M	-
I008		Black/coppery body	Inductor, side bigger IC "RFMD", small PCB, E31M	-
I009		Black body	Smaller IC, small PCB, E31M	-
I010		Black body	Bigger IC "RFMD", small PCB, E31M	-
I011		Black body	Small IC "RF 6361A", small PCB, E31M	-
I012		Silvery body	Big EC "ALBs", side small IC "RF 6361A", small PCB, E31M	-
I013		Silvery body	Small EC, side small IC "RF 6361A", small PCB, E31M	-
I014		Black body	SMD resistor, small PCB, E31M	-
I015		Grey coated white body	SMD capacitor, small PCB, E31M	-
I016		Brown body	Smaller SMD capacitor, small PCB, E31M	-
I017		Brown body	Small SMD capacitor, small PCB, E31M	-
I018		Brown body	Big SMD capacitor, small PCB, E31M	-

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
I019		Black body	Small SMD capacitor, small PCB, E31M	-
I020		Black body	Big SMD capacitor, small PCB, E31M	-
I021		Green coated translucent plastic with coppery metal	Small PCB, E31M	-
I022		Golden metal	Case, socket, big PCB, E31M	-
I023		Golden metal	Pin, socket, big PCB, E31M	-
I024		White plastic	Pin holder, socket, big PCB, E31M	-
I025		Brown body	EC "227J", big PCB, E31M	-
I026		Black body	IC "CFY 58J", side EC "227J", big PCB, E31M	-
I027		Black body	Small inductor, big PCB, E31M	-
I028		Coppery metal	Coil, small inductor, big PCB, E31M	-
I029		Grey body	Big inductor "2R2", big PCB, E31M	-
I030		Coppery metal	Coil, big inductor "2R2", big PCB, E31M	-
I031		Black body	IC "3264", left side, inductor "2R2", big PCB, E31M	-
I032		Silvery metal	Pin, IC "3264", big PCB, E31M	-
I033		Black body	Big IC, right side, inductor "2R2", big PCB, E31M	-
I034		Silvery metal	Pin, big IC, right side, inductor "2R2", big PCB, E31M	-
I035		Black body	IC "M71", corner, big PCB, E31M	-
I036		Silvery/golden body	EC "ZHW", big PCB, E31M	-
I037	White coated black body	SMD resistor "102", big PCB, E31M	-	
I038	Black body	IC "G1706108", big PCB, E31M	-	

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
I039		White coated brown/black body	EC "A709N", big PCB, E31M	-
I040		Black body	IC "ARM", big PCB, E31M	-
I041		Silvery metal	Pin, IC "ARM", big PCB, E31M	-
I042		Black body	IC "CV5", big PCB, E31M	-
I043		Silvery metal	Pin, IC "CV5", big PCB, E31M	-
I044		Black body	IC "483", big PCB, E31M	-
I045		Silvery metal	Pin, IC "483", big PCB, E31M	-
I046		Black body	IC "ZWU", big PCB, E31M	-
I047		Silvery metal	Pin, IC "ZWU", big PCB, E31M	-
I048		Black body	SMD resistor, big PCB, E31M	-
I049		Silvery solder	Solder, big PCB, E31M	-
I050		Black coated translucent plastic with golden metal	Big PCB, E31M	-



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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	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	NA	NA	PASS
I005	ND	ND	ND	ND	NA	NA	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	NA	NA	PASS
I013	ND	ND	ND	ND	NA	NA	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
I018	ND	ND	ND	ND	ND	ND	PASS
I019	ND	ND	ND	ND	ND	ND	PASS
I020	ND	ND	ND	ND	ND	ND	PASS
I021	ND	ND	ND	ND	ND	ND	PASS
I022	ND	ND	ND	ND	NA	NA	PASS
I023	ND	ND	ND	ND	NA	NA	PASS
I024	ND	ND	ND	ND	ND	ND	PASS
I025	ND	ND	ND	ND	ND	ND	PASS
I026	ND	ND	ND	ND	ND	ND	PASS
I027	ND	ND	ND	ND	NA	NA	PASS

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)

*** End of Report ***