

TEST REPORT

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APPLICANT

DATE OF SUBMISSION

TEST PERIOD

SAMPLE DESCRIPTION

Style No. :

Sample Size :

- : PARTICLE INDUSTRIES, INC 126 POST ST, 4TH FLOOR, SAN FRANCISCO, CA 94108 USA
- : JUN 14, 2019
- : JUN 14, 2019 TO JUN 26, 2019
- : E Series

E402

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BUREAU VERITAS SHENZHEN CO.,LTD DONGGUAN BRANCH

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<u>REMARK</u>

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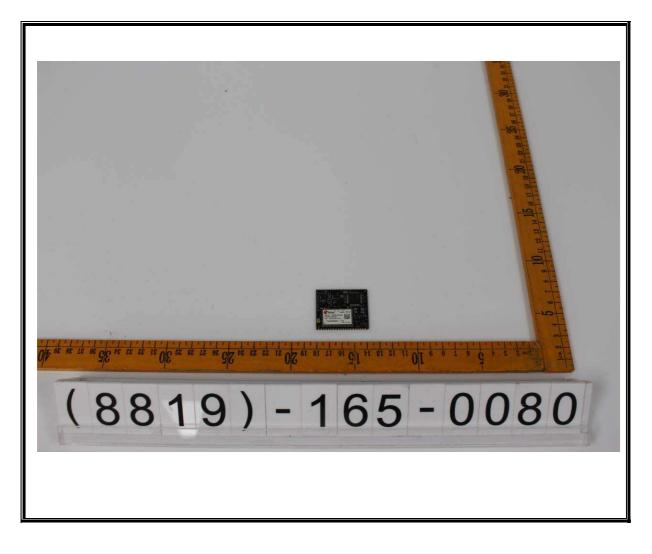
SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the		
Restriction of the Use of Certain Hazardous Substances in	DACC	
Electrical and Electronic Equipment (RoHS) with its	PASS	-
Amendment Directive 2015/863/EU		
The BBP/DBP/DEHP/DIBP content requirements of the European		
Parliament and Council Directive 2011/65/EU on the Restriction of	PASS	
the Use of Certain Hazardous Substances in Electrical and		-
Electronic Equipment (RoHS) with its Amendment Directive		
2015/863/EU		



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Photo of the Submitted Sample





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Test Item Description and Photo List

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
I001		Black/red/white coated brown plastic with glue	Sticker, cover, PCB	-
1002		Silvery metal	Cover, PCB	-
I003		Golden metal	Ring, connector, PCB	-
I004		Golden metal	Pin, connector, PCB	-
1005		Beige plastic	Base, connector, PCB	-
I006		Black body	PCB	-
I007		Grey body	Inductor, PCB	-
1008	incolumn,	Brown body	SMD capacitor, PCB	-
1009		Gold/silvery body	Crystal, PCB	-
I010		Green coated brown plastic with coppery metal	PCB	-
I011		Silvery solder	Solder, PCB	-
I012		Black coated brown plastic with golden metal	РСВ	-



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	Mercury	Chromium	PBBs	PBDEs	Conclusion
		(Cd)	(Hg)	VI (Cr VI)			
Unit			mg	g/kg			-
Test Item(s)	-	-	-	-	-	-	-
I001	ND	ND	ND	ND	ND	ND	PASS
1002	ND	ND	ND	ND	NA	NA	PASS
I003	ND	ND	ND	ND	NA	NA	PASS
I004	ND	ND	ND	ND	NA	NA	PASS
1005	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	NA	NA	PASS
I012	ND	ND	ND	ND	ND*	ND*	PASS

Note / Key:

ND = Not detected">" = Greater than"<" = Less than</th>NR = Not requestedmg/kg = milligram(s) per kilogram = ppm = part(s) per millionNA = Not applicable% = percent10000 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

No.			Detection L	imit (mg/kg)		
	Name of Analytes	X-ray	y fluorescence (XRF) ^[a]	Wet Chemistry	Maximum Allowable Limit (mg/kg)
		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] / See ^[e, j]	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 (MonaBDE) Octabromodiphenyl ether (NonaBDE) Nonabromodiphenyl ether (NonaBDE) Decabromodiphenyl ether (DecaBDE) 	NA	NA	NA	Each 50 ^[f]	Sum 1000



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: 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.
- 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)



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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

Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)		Conclusion			
I001+I005+I010 +I012	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 mg/kg = milligram(s) per kilogram Detection Limit (%) : Each 0.005

10000 mg/kg = 1 %

Remark:

- The amendment will be effective on 22 July 2019. For medical devices and control instruments, effective date will be 22 July 2021.
- The composite test sample(s) of the submitted samples was prepared in the manner requested by the client, when subject to the test performed.
- This report is to Supersede BV(Dong guan) report No. (8819)165-0080 dated on Jun 26, 2019.

*** End of Report ***