TEST REPORT

LAB NO. : **(8820)015-0005**
DATE : **May 9, 2020**
PAGE : **1 OF 8**

APPLICANT	:	**PARTICLE INDUSTRIES, INC** 126 POST ST, 4TH FLOOR, SAN FRANCISCO, CA 94108 USA
DATE OF SUBMISSION	:	JAN 15, 2020
TEST PERIOD	:	JAN 15, 2020 TO FEB 19, 2020
SAMPLE DESCRIPTION	:	B SOM
Style No. :		B520，B523
Sample Size :		1

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

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REMARK

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

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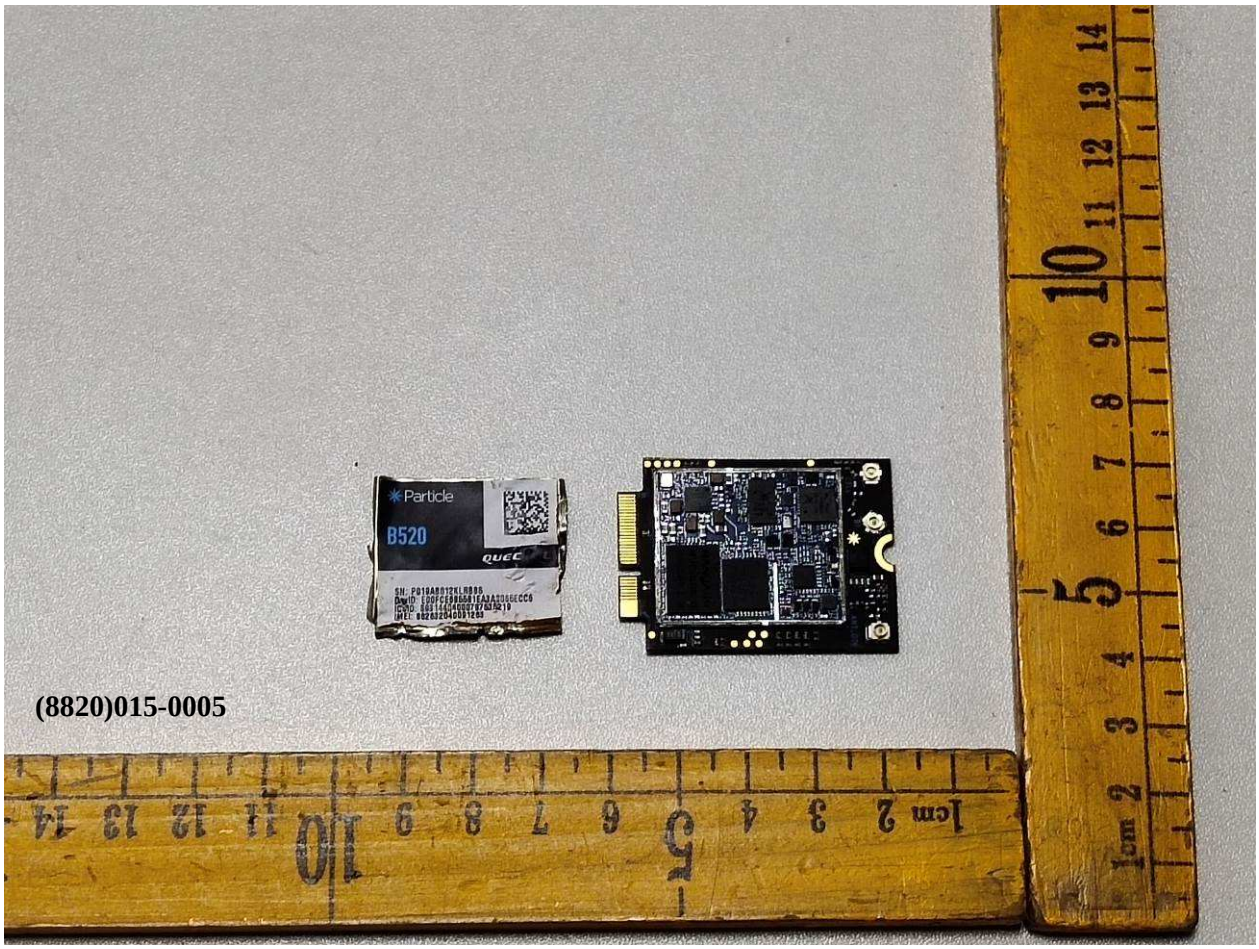
SUMMARY OF TEST RESULTS

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) with its Amendment Directive 2015/863/EU	PASS	-
The BBP/DBP/DEHP/DIBP content requirements of the 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

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
I001		Blue/black/white coated yellow plastic	Sticker, cover, PCB	-
I002		Silvery metal	Cover, PCB	-
I003		Golden metal	Plug, PCB	-
I004		Golden metal	Pin, plug, PCB	-
I005		White plastic	Base, plug, PCB	-
I006		Brown/coppery metal	Inductor, PCB	-
I007		Black body	SMD IC, PCB	-
I008		Brown body	SMD capacitor, PCB	-
I009		Grey printed black body	SMD resistor, PCB	-
I010		Silvery/golden body	SMD EC, PCB	-
I011		Silvery body	SMD EC, PCB	-
I012		Silvery solder	Solder, PCB	-
I013		Silvery metal	Cover, PCB	-
I014		White printed brown/translucent body	SMD EC, PCB	-
I015		Black coated brown plastic with coppery metal	PCB	-

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	ND	ND	PASS
I002	ND	ND	ND	ND	NA	NA	PASS
I003	ND	ND	ND	ND	NA	NA	PASS
I004	ND	ND	ND	Negative*	NA	NA	PASS
I005	ND	ND	ND	ND	ND	ND	PASS
I006	ND	ND	ND	Negative*	NA	NA	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

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.

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]	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 (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - 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.
[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.
[j]	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).

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)

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
I001+I005+I015	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.
- The composite test sample(s) of the submitted samples was prepared in the manner requested by the client, when subject to the test performed.

*** End of Report ***