



HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: (8817)325-0080

Nov 27, 2017

Date Received: Nov 21, 2017

Page 1 of 7

HONG KONG HOIHO ELMATEC TECHNOLOGY LTD
NO.82-83,CHUANGYE 3 ROAD, JIANGBIAN
INDUSTRIAL AREA,SONGGANG STREET, BAOAN
DISTRICT,SHENZHEN P.R.CHINA

Sample Description: MULTI-LAYER,DOUBLE-SIDED PCB(S) WITH FINISHING OF IMMERSION GOLD, OSP, LEAD FREE HAL, IMMERSION TIN, IMMERSION SILVER (INCLUDED FR-4, CEM-3, HALOGEN-FREE LAMINATE, COPPER, NICKEL, GOLD, LEAD-FREE&TIN-LEAD SOLDER, OSP, TIN, SILVER, SOLDER MASK COATING WITH DIFFERENT COLOUR, LEGEND INK WITH DIFFERENT COLOUR, CARBON INK, PEELABLE MASK, E-TEST STAMP AND MARKING

Vendor:	N/A	Sample Size:	1
Manufacturer:	N/A	Style No(s):	NOT PROVIDE
Buyer:	N/A	SKN/SKU No.:	NOT PROVIDE
Labeled Age Grade:	N/A	PO No.:	NOT PROVIDE
Appropriate Age Grade:	N/A	Ref #:	NOT PROVIDE
Client Specified Age Grade:	N/A	Country of Origin:	NOT PROVIDE
Tested Age Grade:	N/A	Assortment No.:	NOT PROVIDE
UPC Code:	N/A	Test Finished Date:	NOV 27, 2017
Test Starting Date:	NOV 21, 2017		

EXECUTIVE SUMMARY:

The sample(s) MEETS the following requirement(s):

- The heavy metals and flame retardants content requirements of the European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).
- The BBP/DBP/DEHP/DIBP content requirements of the 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.

Note: The composite test sample(s) of the submitted samples was prepared in the manner requested by the client, when subject to the test performed.

BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

Harvey Xue
Manager, Analytical Lab

RT/AF/LL REMARK

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

Report Enquiry: (86) 0769 89952999 Ext. 8175 CPSAnalytical.DG@cn.bureauveritas.com

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HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: **(8817)325-0080**

Nov 27, 2017

Page 2 of 7

Tested Component(s) Description List:

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
I001	White /black printed transparent plastic with silvery metal	PCB	-
I002	Green printed yellow plastic with silvery metal	PCB	-
I003	White /green printed green plastic with silvery metal	PCB	-
I004	White/blue printed blue plastic with silvery metal	PCB	-
I005	Black/white printed transparent yellow plastic with silvery metal	PCB	-
I006	White /green printed bright green plastic with silvery metal	PCB	-



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HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: **(8817)325-0080**

Nov 27, 2017

Page 3 of 7

RESULTS:

Heavy Metals and Flame Retardants Content – European 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 (Parameter) and their corresponding Maximum Allowable Limit (Req.) in Result Table	Type I	Metallic material
	Type II	Glass or ceramic material
	Type III	Other non-metallic material except Type II

-	Unit	Req.	Result	
			I001+I002+I003	I004+I005+I006
Test Item(s)	-	-		
Type	-	III	III	III
Parameter	-	-	-	-
Lead (Pb)	mg/kg	1000	ND	ND
Cadmium (Cd)	mg/kg	100	ND	ND
Mercury (Hg)	mg/kg	1000	ND	ND
Chromium VI (Cr VI)	mg/kg	1000	ND	ND
PBBs	mg/kg	1000	ND	ND
MonoBB	mg/kg	-	ND	ND
DiBB	mg/kg	-	ND	ND
TriBB	mg/kg	-	ND	ND
TetraBB	mg/kg	-	ND	ND
PentaBB	mg/kg	-	ND	ND
HexaBB	mg/kg	-	ND	ND
HeptaBB	mg/kg	-	ND	ND
OctaBB	mg/kg	-	ND	ND
NonaBB	mg/kg	-	ND	ND
DecaBB	mg/kg	-	ND	ND
PBDEs	mg/kg	1000	ND	ND
MonoBDE	mg/kg	-	ND	ND
DiBDE	mg/kg	-	ND	ND
TriBDE	mg/kg	-	ND	ND
TetraBDE	mg/kg	-	ND	ND
PentaBDE	mg/kg	-	ND	ND
HexaBDE	mg/kg	-	ND	ND
HeptaBDE	mg/kg	-	ND	ND
OctaBDE	mg/kg	-	ND	ND
NonaBDE	mg/kg	-	ND	ND
DecaBDE	mg/kg	-	ND	ND
Conclusion	-	-	PASS	PASS



HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: **(8817)325-0080**

Nov 27, 2017

Page 4 of 7

RESULTS:

Note / key:

ND = Not detected	">" = Greater than	Req. = Requirement
NR = Not requested	mg/kg = milligram(s) per kilogram = ppm = part(s) per million	
NA = Not Applicable	10000 mg/kg = 1 %	% = percent
Detection Limit (mg/kg) :		
For Type I:	Each (Pb, Cd & Hg) 10	
For Type II:	Each (Pb, Cd, Hg & Cr VI) 10	
For Type III:	Polymers & Electronics - Each (Pb, Cd, Hg & Cr VI): 10; Each (PBBs & PBDEs): 50 Others - Each (Pb, Cd & Hg): 10; Cr VI: 3.0; Each (PBBs & PBDEs): 50	

Remark:

- The list of analytes is summarized in table of Appendix.
- 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 [European Council Directive 2011/65/EU] :		
No.	Name of Analytes	Test Method(s)
1	Lead (Pb)	With reference to International Standard IEC 62321-5: 2013.
2	Cadmium (Cd)	
3	Mercury (Hg)	With reference to International Standard IEC 62321-4: 2013.
4	Chromium VI (Cr VI)	Metal : With reference to International Standard IEC 62321-7-1: 2015. Polymers and Electronics : With reference to European Standard EN 62321: 2009, Annex C. Leather : International Standard ISO 17075-1:2017. Other than Metal, Leather, Polymers and Electronics: With reference to International Standard ISO 17075-1:2017.
5	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	With reference to International Standard IEC 62321-6: 2015.
6	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)	
[a]	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.	



HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: **(8817)325-0080**

Nov 27, 2017

Page 6 of 7

RESULTS:

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 Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)	Result (%)				Conclusion
I001+I002+I003	ND	ND	ND	ND	PASS
I004+I005+I006	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.



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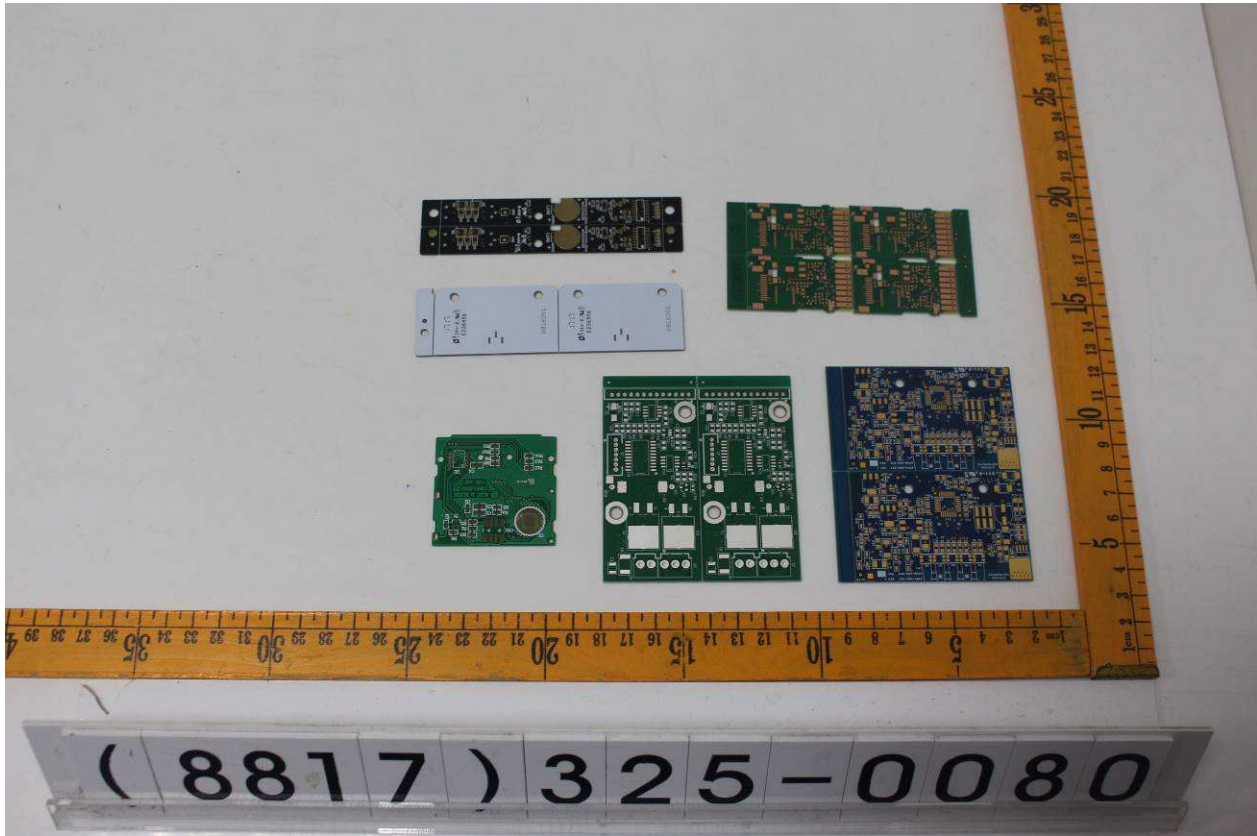
HONG KONG HOIHO ELMATEC TECHNOLOGY LTD

Technical Report: **(8817)325-0080**

Nov 27, 2017

Page 7 of 7

RESULTS:



END OF REPORT