Testing Report

Job No.:/ Report No.: HQ16304XXXX Date: Apr. 14, 2016

Applicant: XX

XX

Contact(s): XX

Overall Rating:	
Data	☐
Satisfactory	☑
Unsatisfactory	☐
Others, See Detail Enclosed	☐

Sample Information

Client:	XX
Supplier:	XX
Factory:	XX
Item No.:	XX
Description:	XX
PO No.:	XX
Sample Submitted:	2 pcs by factory in good condition
Country of Origin:	China
Destination:	Europe
Received Date:	Apr. 12, 2016
Testing Period:	Apr. 12, 2016 to Apr. 14, 2016
Testing Standard:	Selected tests as requested by applicants, details refer to following pages.
Service Location:	Hangzhou
Remark:	/

**********To be Continued

Authorized by:
HQTS QA International Services Co., Ltd.

Neil Peng
Supervisor

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Testing Summary of Tested Component on Submitted Sample:

1	EU Directive 2011/65/EU--RoHS	Pass

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1 EU Directive 2011/65/EU--RoHS

Specimen	Restricted Substances	Results of XRF		Results of Chemical Analysis (mg/kg)	Limit(mg/kg)	Conclusion
		Result	Comment			
#1	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#2	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#3	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#4	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#5	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	

**********To be Continued

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#6	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#7	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#8	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#9	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#10	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	

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#11	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#12	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#13	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#14	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#15	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	

**********To be Continued

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#16	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#17	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#18	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#19	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#20	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	

**********To be Continued

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#21	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#22	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#23	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	
#24	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#25	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	

**********To be Continued

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#26	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	/	/	/	/	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	/	
#27	Lead (Pb)	ND	BL	/	1000	Pass
	Cadmium (Cd)	ND	BL	/	100	
	Mercury (Hg)	ND	BL	/	1000	
	Chromium VI (Cr^{6+}) *	ND	BL	/	1000	
	Polybrominated Biphenyls (PBBs)**	ND	BL	/	1000	
	Polybrominated Diphenyl Ethers (PBDEs)**			/	1000	

Remark: The above testing result was determined by XRF method for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg, Cr), UV-VIS (for Cr6+)and GC-MS(for PBBs, PBDEs) is recommended, if the result is inconclusive.

*= Total Chromium (Cr) Content result was tested in lab by XRF method, and got result was less then BL, thus the result of Chromium VI (Cr6+) content is less than the required limit in standard.

**=Total Bromine(Br) was tested in lab by XRF method, and got result was less than BL, thus the result of Polybrominated Biphenyls (PBBs) content and Polybrominated Diphenyl Ethers (PBDEs) content are less than the required limit in standard.

***=Based on the result of reported in above, and according to 2011/65/EU RoHs regulation Annex, section 6, while the lead as an alloying element in steel containing up to 0,35 % lead by weight, aluminium containing up to 0,4 % lead by weight and as a copper alloy containing up to 4 % lead by weight can be exempted.

****=Based on the result of reported in above, and according to 2011/65/EU RoHs regulation Annex, section 7(a), while the lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85 % lead), then can be exempted.

ND=Not Detected (<MDL) MDL=Method Detection Limit

**********To be Continued

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Remark: Screening limits in mg/kg for regulated elements in various matrices:

Element	Polymers		Metals		Composite	
	Comment	ND	Comment	ND	Comment	ND
Cd (mg/kg)	BL ≤ 70 < X <130 ≤ OL	<50	BL ≤ 70< X <130 ≤ OL	<70	70< X < 150≤ OL	<70
Pb(mg/kg)	BL ≤ 700< X <1300≤ OL	<100	BL ≤ 700< X <1300≤ OL	<200	BL ≤ 500< X <1500 ≤ OL	<200
Hg(mg/kg)	BL ≤700 < X <1300 ≤ OL	<100	BL ≤ 700< X <1300 ≤ OL	<200	BL ≤ 500 < X <1 500 ≤ OL	<200
Cr(mg/kg)	BL ≤ 700 < X	<100	BL ≤ 700 < X	<200	BL ≤ 550 < X	<200
Br(mg/kg)	BL ≤ 300< X	<200	Not Applicable		BL ≤ 250< X	<200

A common set of limits for the substances of interest have been assumed for the purposes of this example. The limits are 100 mg/kg for Cd and 1 000 mg/kg for Pb, Hg and Cr. The limit for Br is calculated based on the stoichiometry of Br in the most common congeners of PBB/PBDE and their limit of 1 000 mg/kg. The "action levels" for this method have been set for the purpose of this screening procedure with a 30 % margin of safety (50 % for composite materials).

A "BELOW LIMIT" (BL) or "OVER LIMIT" (OL) determination will be set at 30 % (50 % for composite materials) less than or greater than the limit, respectively. The margins of safety have been agreed upon based on the experience of many experts and practitioners in the industry. Further explanation of this approach to estimating uncertainty (translated here as "margin of safety") can be found in 6.6 c).

The symbol "X" marks the region where further investigation is necessary.

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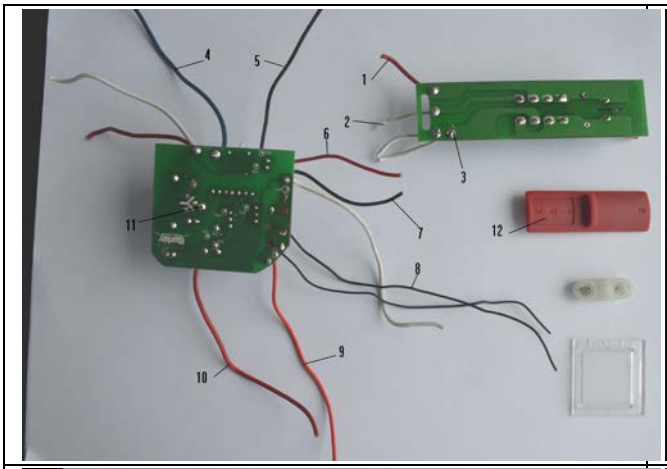
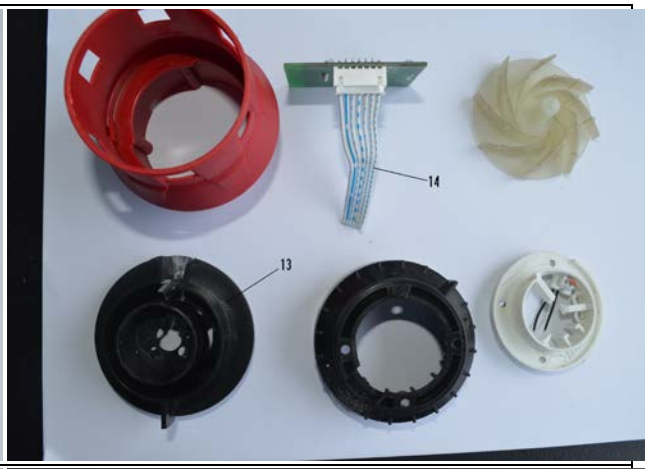
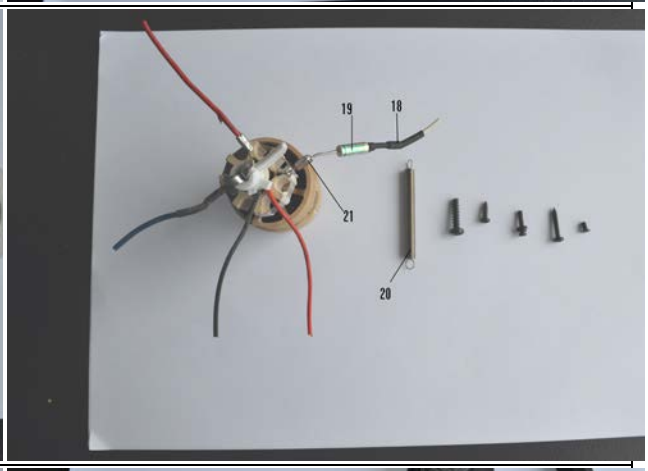
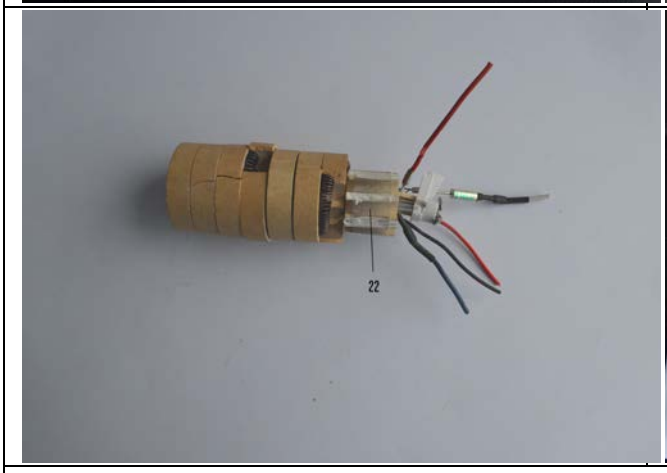
Photo Attachment









Tested Sample

**********To be Continued

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Photo Attachment

Tested Sample

**********End of Report

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