Test Report

Applicant	:	Hefei Quicly Electric Co., Ltd.
Address	:	C34, Jia Hai Industrial Park, Xin Bengbu Rd, Xinzhan District, Hefei City, Anhui Province
Sample Name	:	Infrared heater
Tested Model	:	KKL-IR
Model/Type reference	:	KKL-DS, KKL-CF, KKL-KZ, KKL-MZ
Sample Receiving date	:	2016-12-29
Test period	:	2016-12-29 – 2017-01-04
Test Requirement	:	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU.
Test Method	:	Please refer to next page(s).
Test result	:	Please refer to next page(s).
Conclusion	:	**PASS** Based on the verification results of the submitted sample(s), the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs) and Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU—The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.
Note	:	The test results are related only to the tested items.

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Lab Manager: Gavin Zhou

2017-01-04

Test Method:

1. Disassembly, disjointment and mechanical sample preparation
   －Ref. to IEC 62321-2: 2013, Disassembly, disjointment and mechanical sample preparation.
2. With reference to IEC 62321-1: 2013, tests were performed for the samples indicated by the photos in this report.

(1) Screening – Lead, mercury, cadmium, total chromium and total bromine
   －Ref. to IEC 62321-3-1: 2013, Screening for Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry.

(2) Wet chemical test method
   a. Total Lead, Cadmium, Chromium and Mercury content
   －Ref. to IEC 62321-4: 2013, determination of Mercury in polymers, metals and electronics by ICP-OES.
   －Ref. to IEC 62321-5: 2013, determination of Cadmium, lead and chromium in polymers and electronics and cadmium and lead in metals by ICP-OES.
   b. Chromium (VI) content
   －For Colourless and coloured corrosion-protected coatings on metals
   Ref. to IEC 62321: 2008 Annex B, Test for the presence of hexavalent chromium (Cr(VI)) in colourless and coloured corrosion-protected coatings on metals.
   －For polymers and electronics, Ref. to IEC 62321: 2008 Annex C, determination of hexavalent chromium (Cr(VI)) in polymers and electronics by the colorimetric method.
   c. PBBs, PBDEs
   －Ref. to IEC 62321-6: 2015, determination of polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatograhy -mass spectrometry (GC-MS).

Test result(s):

Part No.	Part Description	Results of EDXRF					Chemical confirmation results (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
1	Quartz tube	BL	BL	BL	BL	---	---	Pass
2	Tungsten filament	BL	BL	BL	BL	---	---	Pass
3	Iron wire	BL	BL	BL	BL	---	---	Pass
4	Carbon filament	BL	BL	BL	BL	BL	---	Pass
5	Silvery metal	BL	BL	BL	IN	---	Cr(VI): Negative	Pass
6	Porcelain head	BL	BL	BL	BL	---	---	Pass
7-1	White fiber reinforced sheath	BL	BL	BL	BL	BL	---	Pass
7-2	White wire sheath	BL	BL	BL	BL	BL	---	Pass
8	Silvery metal wire	BL	BL	BL	BL	---	---	Pass
9	Nano white	BL	BL	BL	BL	BL	---	Pass
10	The gold water	BL	BL	BL	BL	BL	---	Pass

Remark:

(^1) "---" = Not Applicable;

(^2) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).

(b) The XRF screening test for RoHS elements-The reading may be different to the actual content in the sample be of non-uniformity composition.

(c) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Pb, Cd, Hg), UV-VIS (for Cr(VI)) and GC/MSD (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warming value according to IEC 62321-3-1: 2013.

Attached table 1, XRF screening limits in mg/kg for regulated elements in various matrices:

Element	Polymer Materials	Metallic Materials	Electronics
Cd	BL≤(70-3σ)< X < (130+3σ) ≤OL	BL≤(70-3σ)< X < (130+3σ) ≤OL	LOD< X < (250+3σ) ≤OL
Pb	BL≤(700-3σ)< X < (1300+3σ) ≤OL	BL≤(700-3σ)< X < (1300+3σ) ≤OL	BL≤(500-3σ)< X < (1500+3σ) ≤OL
Hg	BL≤(700-3σ)< X < (1300+3σ) ≤OL	BL≤(700-3σ)< X < (1300+3σ) ≤OL	BL≤(500-3σ)< X < (1500+3σ) ≤OL
Br	BL≤(300-3σ)< X	N.A.	BL≤(250-3σ)< X
Cr	BL≤(700-3σ)< X	BL≤(700-3σ)< X	BL≤(500-3σ)< X

Note: ① BL "below limit" = the result less than the limit.

② OL "over limit" = the result greater than the limit.

③ IN = inconclusive, the region where need further chemical testing by ICP-OES (for Pb, Cd, Hg), UV-VIS (for Cr(VI)) and GC/MSD (for PBBs, PBDEs).

④ 3σ = Repeability of the analyser at the action level.

⑤ LOD = Limit of detection.

(^3) (a) mg/kg = ppm = 0.0001%; (b) N.D. = Not detected (lower than RL);

(c) Reporting Limit (RL) and Limit of Directive 2011/65/EU.

Parameter	Unit	Limit	Reporting Limit (RL)
Lead (Pb)	mg/kg	1000	10
Cadmium (Cd)	mg/kg	100	10
Mercury (Hg)	mg/kg	1000	10
Chromium VI (Cr VI)	mg/kg	1000	10^{R1}
Group PBBs	mg/kg	1000	R2
Group PBDEs	mg/kg	1000	R2

R1: The reporting limit (RL) of Cr(VI) for polymers and electronics is 10mg/kg.

R2: The reporting limit (RL) for single compound of PBBs & PBDEs is 50mg/kg.

(d) According to IEC 62321:2008, result on Cr(VI) for metal sample is shown as Negative or Positive: Negative=Absence of Cr(VI), Positive=Presence of Cr(VI).

(^4) The client declared that the material of above tested components to cover all of the following models:

Description
KKL-IR, KKL-DS, KKL-CF, KKL-KZ, KKL-MZ

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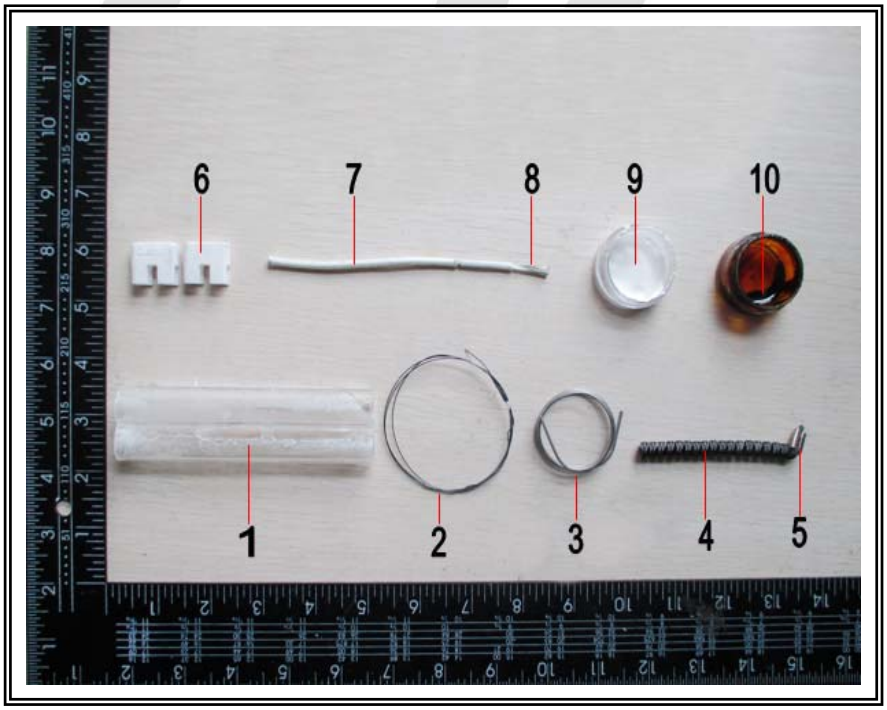
Sample photo(s):



GIG authenticate the photo(s) on original report only

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