

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 1 of 30

Client :

Address :

The following merchandise was (were) submitted and identified by the client as:

Name of Product : HAIR CLIPPER

Test Model : JD-512

Model May Cover : JD-510

Sample Received : Oct. 26, 2012

Nov. 22, 2012

Test Period : Oct. 26, 2012 – Nov. 28, 2012

Test Request : According to customer's requirements, Split the sample and determine the Pb, Cd, Hg, Cr(VI), PBBs & PBDEs content of every homogenous material.

Test Method :  
1. Validation was performed for the samples disjointed from the submitted articles  
2. Tests was performed for the samples indicated by the photos in the report with test methods reference to IEC62321:2008 Procedures for the Determination of Levels of Six Regulated Substances in Electrotechnical  
(1) Screening by XRF Spectroscopy  
(2) Wet Chemical Test Method  
a. Determination of Lead ,Cadmium and Mercury by ICP  
b. Determination of Hexavalent Chromium by Spot test or UV-Vis Method  
c. Determination of PBBs and PBDEs by GC-MS

Conclusion : Based on the analysis on the submitted samples, the results **do comply with** the RoHS Directive 2011/65/EU.

Issued by:

  
~~TÜV NORD Green Product Service Centre~~  
Technical Manager



 **TÜV NORD(Hangzhou)CO.,LTD.**

Member of TÜV NORD Group

5 Floor, No. 50 Jiuquan Road, Jiangnan District, Hangzhou, China, 310019

tel: +86(0)571 85386989 ext 212

fax: +86(0)571 85386986

中国·杭州市江干区九环路50号5楼(杭州市质量技术监督检测院内) 邮编: 310019 website: www.tuv-nord.com/cn e-mail: GPSC@tuv-nord.com

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 2 of 30

## TEST RESULTS:

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
1#	Black plastic baffle plate	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
2#	Silvery metal blade	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
3#	Silvery metal spring clip	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
4#	White plastic part	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
5#	Silvery metal tool bit	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 3 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
6#	Silvery metal screw	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
7#	Silvery metal clip	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
8#	Gray black plastic ring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
9#	Reddish brown plastic ring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012
10#	Black plastic upper shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 4 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
11#	Silvery white metal screw	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
12#	Silvery metal contact piece	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012
13#	Black plastic bottom shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012
14#	Black metal screw	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
15#	Black rubber seal ring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 5 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
16#	Coppery metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012
17#	Red plastic sheet	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
18#	Translucence rubber seal ring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#	Motor					
19#-1	White label with black font	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#-2	Silvery metal motor shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 6 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
19#-3	Coppery metal bearing	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-4	Black magnet	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-5	Silvery metal clip	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-6	Reddish brown plastic gasket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#-7	Silvery metal contact piece	Pb Cd Hg Cr(VI) PBBs PBDEs	IN BL BL BL --- ---	N.D. <sup>R</sup> --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 28, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 7 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
19#-8	Transparent plastic part	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#-9	Silvery metal shaft	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-10	White plastic gasket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#-11	Silvery silicon steel sheet	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-12	Coppery metal winding	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 8 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
19#-13	Silvery metal piece	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-14	Coppery metal contact piece	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
19#-15	Black plastic motor rear cover	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
19#-16	Silvery metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
20#	PCB board					
20#-1	Green PCB board	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 9 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
20#-2	Black chip diode	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
20#-3	Black chip resistor	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
20#-4	Red light-emitting diode	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
20#-5	Silvery metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
20#-6	Red wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 10 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
20#-7	Blue wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
20#-8	Coppery metal wire	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012
20#-9	Coppery metal terminal	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
21#	Power cord					
21#-1	Silvery label with black font	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-2	Black plastic upper shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. <sup>R</sup> N.D. <sup>R</sup>	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 28, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 11 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
21#-3	Black plastic bottom shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. <sup>R</sup> 808 <sup>R</sup>	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 28, 2012
21#-4	Silvery metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	IN BL BL BL --- ---	26760 <sup>①</sup> --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
21#-5	Silvery silicon steel sheet	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
21#-6	White plastic sheath	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-7	Red tape	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 12 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
21#-8	Black plastic sheet	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-9	White plastic spool	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-10	Copper metal winding	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012
21#-11	Copper metal coil	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012
21#-12	Gray wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 13 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
21#-13	White temperature control	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012
21#-14	Silvery metal pin	Pb Cd Hg Cr(VI) PBBs PBDEs	IN BL BL BL --- ---	2332 <sup>①</sup> --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
21#-15	PCB board					
21#-15-1	Yellow PCB board	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-15-2	Black electrolytic capacitor	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-15-3	Black diode	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 14 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
21#-16	Black plastic plug	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-17	Coppery metal contact tube	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
21#-18	Black and white wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
21#-19	Black wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
22#	Changer					
22#-1	Black plastic shell	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*



**TUV NORD(Hangzhou)CO.,LTD.**

Member of TÜV NORD Group

5 Floor, No. 50 Jiuhuan Road, Jiangnan District, Hangzhou, China, 310019

tel: +86(0)571 85386989 ext 212

fax: +86(0)571 85386986

中国浙江省杭州市江干区九环路50号5楼(杭州市质量技术监督检测院内) 邮编: 310019 website: www.tuv-nord.com/cn e-mail: GPSC@tuv-nord.com

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 15 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
22#-2	Silvery metal contact pin	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
22#-3	Silvery metal spring	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL IN --- ---	--- --- --- Negative --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012
22#-4	Black plastic fixed part	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
22#-5	Black fine wire jacket	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
22#-6	Silvery metal wire	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL --- ---	--- --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 16 of 30

Part No.	Part Description	Restricted Substances	Result of EDXRF (1)	Result of Chemical Testing(2) (mg/kg)	Conclusion on RoHS	Data Submitted/ Resubmitted Date
23#	Black plastic comb	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL IN IN	--- --- --- --- N.D. N.D.	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012/ Nov. 02, 2012
24#	Black plastic part	Pb Cd Hg Cr(VI) PBBs PBDEs	BL BL BL BL BL BL	--- --- --- --- --- ---	Comply Comply Comply Comply Comply Comply	Nov. 02, 2012
25#	Coppery metal centrifuge rotor	Pb Cd Hg Cr(VI) PBBs PBDEs	IN BL BL BL --- ---	32480 <sup>①</sup> --- --- --- --- ---	Comply Comply Comply Comply N.A. N.A.	Nov. 02, 2012/ Nov. 02, 2012

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 17 of 30

## Remark:

- (1) (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<sup>6+</sup>.  
 (b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr<sup>6+</sup>) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321:2008 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) BL = Below Limit, OL = Over Limit, IN = Inconclusive, LOD = Limit of Detection,  
 -- = Not Regulated, NA = Not Applicable.

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

- (2) (a) mg/kg = ppm = 0.0001%, N.D.= Not Detected (<MDL), --- = Not Conducted.

(b) Unit and Method Detection Limit (MDL) in wet chemical test

Test Items	Pb	Cd	Hg
Units	mg/kg	mg/kg	mg/kg
MDL	2	2	2

The MDL for single compound of PBBs & PBDEs is 5 mg/kg and MDL of Cr<sup>6+</sup> for polymer & composite sample is 2 mg/kg.

(c) According to IEC 62321:2008, result on Cr<sup>6+</sup> for metal sample is shown as Positive/Negative.

Positive = Presence of Cr<sup>6+</sup> coating, Negative = Absence of Cr<sup>6+</sup> coating.

(d) ① Copper alloy containing up to 4% lead by weight (RoHS Exemption 6(c)).

(e) R = Re-submitted sample.

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 18 of 30

## (3) RoHS Exemptions

Exemptions	
RoHS Directive 2011/65/EU ANNEX III EU Directive 2011/534/EU	
Exemption Items	Expires Date
1, Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):	
1(a), For general lighting purposes < 30 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011 until 31 December 2012; 2,5 mg shall be used per burner after 31 December 2012
1(b), For general lighting purposes $\geq 30$ W and < 50 W: 5 mg	Expires on 31 December 2011; 3,5 mg may be used per burner after 31 December 2011
1(c), For general lighting purposes $\geq 50$ W and < 150 W: 5 mg	
1(d), For general lighting purposes $\geq 150$ W: 15 mg	
1(e), For general lighting purposes with circular or square structural shape and tube diameter $\leq 17$ mm	No limitation of use until 31 December 2011; 7 mg may be used per burner after 31 December 2011
1(f), For special purposes: 5 mg	
2(a), Mercury in double-capped linear fluorescent lamps for general lighting purposes not exceeding (per lamp):	
2(a)(1), Tri-band phosphor with normal lifetime and a tube diameter < 9 mm (e.g. T2): 5 mg	Expires on 31 December 2011; 4 mg may be used per lamp after 31 December 2011
2(a)(2), Tri-band phosphor with normal lifetime and a tube diameter $\geq 9$ mm and $\leq 17$ mm (e.g. T5): 5 mg	Expires on 31 December 2011; 3 mg may be used per lamp after 31 December 2011
2(a)(3), Tri-band phosphor with normal lifetime and a tube diameter > 17 mm and $\leq 28$ mm (e.g. T8): 5 mg	Expires on 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
2(a)(4), Tri-band phosphor with normal lifetime and a tube diameter > 28 mm (e.g. T12): 5 mg	Expires on 31 December 2012; 3,5 mg may be used per lamp after 31 December 2012
2(a)(5), Tri-band phosphor with long lifetime ( $\geq 25\,000$ h): 8 mg	Expires on 31 December 2011; 5 mg may be used per lamp after 31 December 2011
2(b), Mercury in other fluorescent lamps not exceeding (per lamp):	
2(b)(1), Linear halophosphate lamps with tube > 28 mm (e.g. T10 and T12): 10 mg	Expires on 13 April 2012
2(b)(2), Non-linear halophosphate lamps (all diameters): 15 mg	Expires on 13 April 2016
2(b)(3), Non-linear tri-band phosphor lamps with tube diameter > 17 mm (e.g. T9)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
2(b)(4), Lamps for other general lighting and special purposes (e.g. induction lamps)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
3, Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):	
3(a), Short length ( $\leq 500$ mm)	No limitation of use until 31 December 2011; 3,5 mg may be used per lamp after 31 December 2011
3(b), Medium length (> 500 mm and $\leq 1\,500$ mm)	No limitation of use until 31 December 2011; 5 mg may be used per lamp after 31 December 2011

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 19 of 30

Exemptions	
RoHS Directive 2011/65/EU ANNEX III EU Directive 2011/534/EU	
Exemption Items	Expires Date
3(c), Long length (> 1 500 mm)	No limitation of use until 31 December 2011; 13 mg may be used per lamp after 31 December 2011
4(a), Mercury in other low pressure discharge lamps (per lamp)	No limitation of use until 31 December 2011; 15 mg may be used per lamp after 31 December 2011
4(b), Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with improved colour rendering index Ra > 60:	
4(b) -I, P ≤ 155 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(b) -II, 155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(b) -III, P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(c), Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner):	
4(c)-I, P ≤ 155 W	No limitation of use until 31 December 2011; 25 mg may be used per burner after 31 December 2011
4(c)-II, 155 W < P ≤ 405 W	No limitation of use until 31 December 2011; 30 mg may be used per burner after 31 December 2011
4(c)-III, P > 405 W	No limitation of use until 31 December 2011; 40 mg may be used per burner after 31 December 2011
4(d), Mercury in High Pressure Mercury (vapour) lamps (HPMV)	Expires on 13 April 2015
4(e), Mercury in metal halide lamps (MH)	
4(f), Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex	
5(a), Lead in glass of cathode ray tubes	
5(b), Lead in glass of fluorescent tubes not exceeding 0,2 % by weight	
6(a), Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0,35 % lead by weight	
6(b), Lead as an alloying element in aluminium containing up to 0,4 % lead by weight	
6(c), Copper alloy containing up to 4 % lead by weight	
7(a), Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)	
7(b), Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications	

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 20 of 30

Exemptions	
RoHS Directive 2011/65/EU ANNEX III EU Directive 2011/534/EU	
Exemption Items	Expires Date
7(c)-I, Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound	
7(c)-II, Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher	
7(c)-III, Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
7(c). IV, Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors	
8(a), Cadmium and its compounds in one shot pellet type thermal cut-offs	Expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012
8(b), Cadmium and its compounds in electrical contacts	
9, Hexavalent chromium as an anticorrosion agent of the carbon steel cooling system in absorption refrigerators up to 0,75 % by weight in the cooling solution	
9(b), Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and refrigeration (HVACR) applications	
11(a), Lead used in C-press compliant pin connector systems	May be used in spare parts for EEE placed on the market before 24 September 2010
11(b), Lead used in other than C-press compliant pin connector systems	Expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013
12, Lead as a coating material for the thermal conduction module C-ring	May be used in spare parts for EEE placed on the market before 24 September 2010
13(a), Lead in white glasses used for optical applications	
13(b), Cadmium and lead in filter glasses and glasses used for reflectance standards	
14, Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80 % and less than 85 % by weight	Expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011
15, Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages	
16, Lead in linear incandescent lamps with silicate coated tubes	Expires on 1 September 2013
17, Lead halide as radiant agent in high intensity discharge (HID) lamps used for professional reprography applications	
18(a), Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as speciality lamps for diazoprinting reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr,Ba) <sub>2</sub> MgSi <sub>2</sub> O <sub>7</sub> : Pb)	Expires on 1 January 2011
18(b), Lead as activator in the fluorescent powder (1 % lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi <sub>2</sub> O <sub>5</sub> :Pb)	

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 21 of 30

Exemptions	
RoHS Directive 2011/65/EU ANNEX III EU Directive 2011/534/EU	
Exemption Items	Expires Date
19, Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact energy saving lamps (ESL)	Expires on 1 June 2011
20, Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCDs)	Expires on 1 June 2011
21, Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glasses	
23, Lead in finishes of fine pitch components other than connectors with a pitch of 0,65 mm and less	May be used in spare parts for EEE placed on the market before 24 September 2010
24, Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors	
25, Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring	
26, Lead oxide in the glass envelope of black light blue lamps	Expires on 1 June 2011
27, Lead alloys as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) loudspeakers	Expired on 24 September 2010
29, Lead bound in crystal glass as defined in Annex I (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC <sup>(1)</sup>	
30, Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more	
31, Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or industrial lighting)	
32, Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes	
33, Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers	
34, Lead in cermet-based trimmer potentiometer elements	
36, Mercury used as a cathode sputtering inhibitor in DC plasma displays with a content up to 30 mg per display	Expired on 1 July 2010
37, Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body	
38, Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide	
39, Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm <sup>2</sup> of light-emitting area) for use in solid state illumination or display systems	Expires on 1 July 2014
40, Cadmium in photoresistors for analogue optocouplers applied in professional audio equipment.	Expires on 31 December 2013
<p>Note: 1. <sup>(1)</sup> OJ L 326, 29.12.1969, p.36.</p> <p>2. For the purposes of Directive 2011/65/EU, a maximum concentration value of 0,1 % by weight in homogeneous materials for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and of 0,01 % by weight in homogeneous materials for cadmium shall be tolerated.</p>	

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 22 of 30

Exemptions	
RoHS Directive 2011/65/EU ANNEX IV Equipment utilising or detecting ionising radiation	
Exemption Items	Expires Date
1. Lead, cadmium and mercury in detectors for ionising radiation.	
2. Lead bearings in X-ray tubes.	
3. Lead in electromagnetic radiation amplification devices: micro-channel plate and capillary plate.	
4. Lead in glass frit of X-ray tubes and image intensifiers and lead in glass frit binder for assembly of gas lasers and for vacuum tubes that convert electromagnetic radiation into electrons.	
5. Lead in shielding for ionising radiation.	
6. Lead in X-ray test objects.	
7. Lead stearate X-ray diffraction crystals.	
8. Radioactive cadmium isotope source for portable X-ray fluorescence spectrometers. Sensors, detectors and electrodes	
8.1a. Lead and cadmium in ion selective electrodes including glass of pH electrodes.	
8.1b. Lead anodes in electrochemical oxygen sensors.	
8.1c. Lead, cadmium and mercury in infra-red light detectors.	
8.1d. Mercury in reference electrodes: low chloride mercury chloride, mercury sulphate and mercury oxide.	
9. Cadmium in helium-cadmium lasers.	
10. Lead and cadmium in atomic absorption spectroscopy lamps.	
11. Lead in alloys as a superconductor and thermal conductor in MRI.	
12. Lead and cadmium in metallic bonds to superconducting materials in MRI and SQUID detectors.	
13. Lead in counterweights.	
14. Lead in single crystal piezoelectric materials for ultrasonic transducers.	
15. Lead in solders for bonding to ultrasonic transducers.	
16. Mercury in very high accuracy capacitance and loss measurement bridges and in high frequency RF switches and relays in monitoring and control instruments not exceeding 20 mg of mercury per switch or relay.	
17. Lead in solders in portable emergency defibrillators.	

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 23 of 30

Exemptions	
RoHS Directive 2011/65/EU ANNEX IV Equipment utilising or detecting ionising radiation	
Exemption Items	Expires Date
18. Lead in solders of high performance infrared imaging modules to detect in the range 8-14 µm.	
19. Lead in Liquid crystal on silicon (LCoS) displays.	
20. Cadmium in X-ray measurement filters.	

## PRODUCT PHOTO



\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

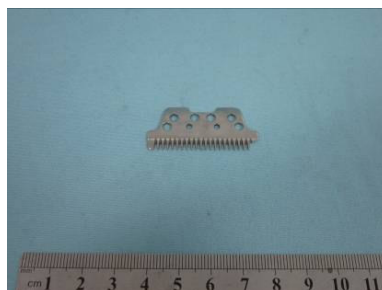
Date : Nov. 29, 2012

Page No. : 24 of 30

## SAMPLE PHOTOS



1#



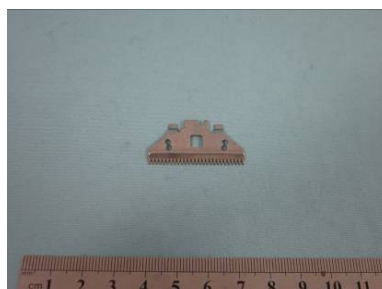
2#



3#



4#



5#



6#



7#



8#



9#



10#



11#



12#

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 25 of 30



13#



14#



15#



16#



17#



18#



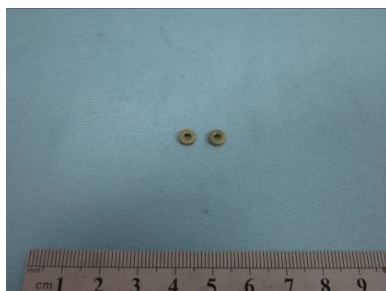
19#



19#-1



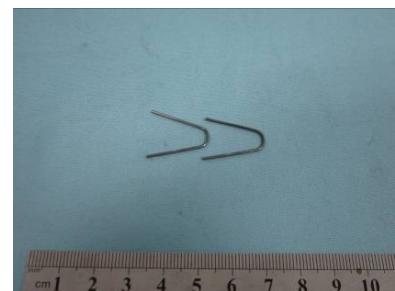
19#-2



19#-3



19#-4



19#-5

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 26 of 30



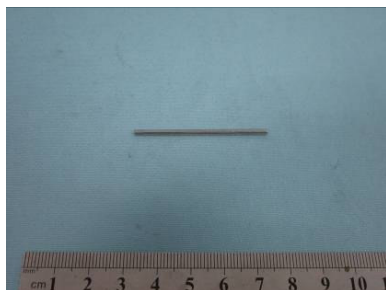
19#-6



19#-7



19#-8



19#-9



19#-10



19#-11



19#-12



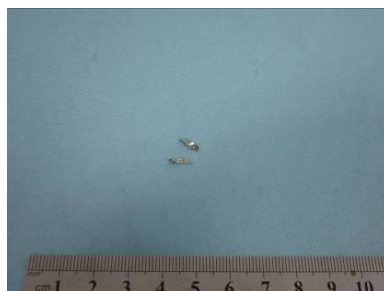
19#-13



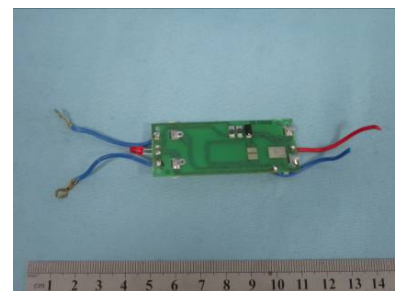
19#-14



19#-15



19#-16



20#

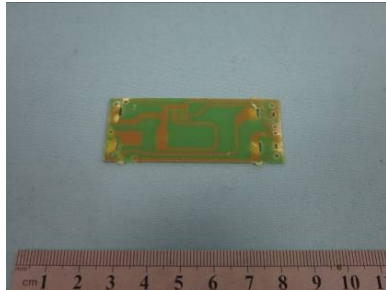
\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

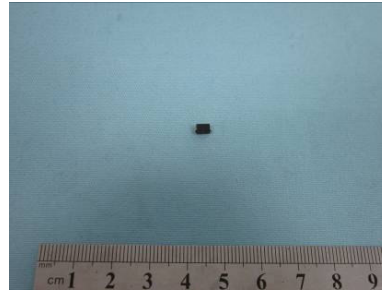
Reference No. : TRHZ1211024

Date : Nov. 29, 2012

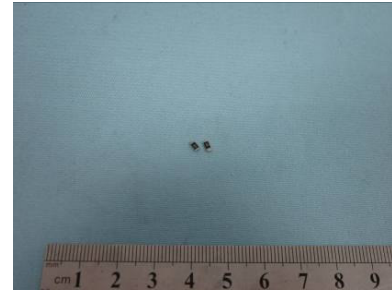
Page No. : 27 of 30



20#-1



20#-2



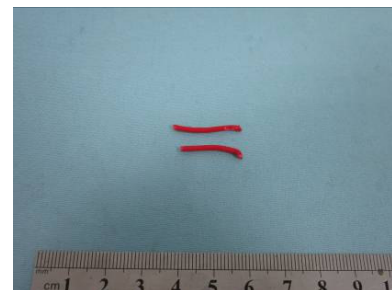
20#-3



20#-4



20#-5



20#-6



20#-7



20#-8



20#-9



21#



21#-1



21#-2

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 28 of 30



21#-3



21#-4



21#-5



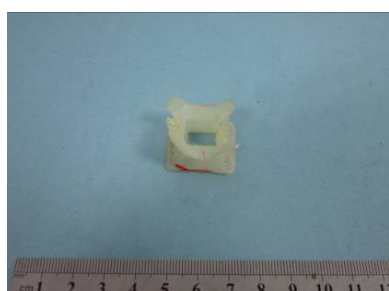
21#-6



21#-7



21#-8



21#-9



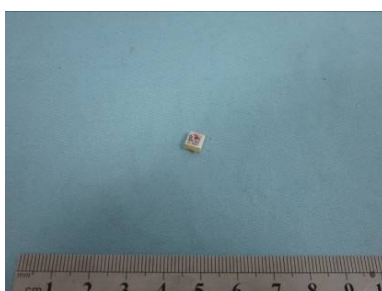
21#-10



21#-11



21#-12



21#-13



21#-14

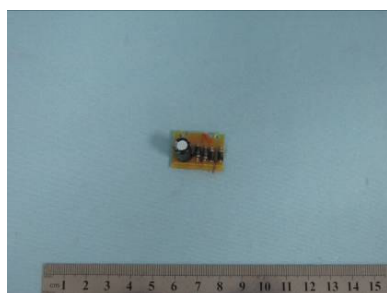
\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 29 of 30



21#-15



21#-15-1



21#-15-2



21#-15-3



21#-16



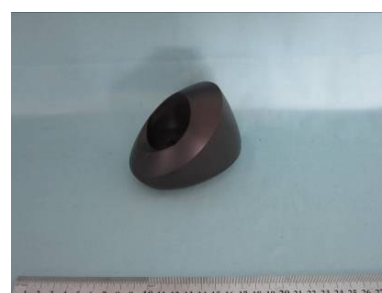
21#-17



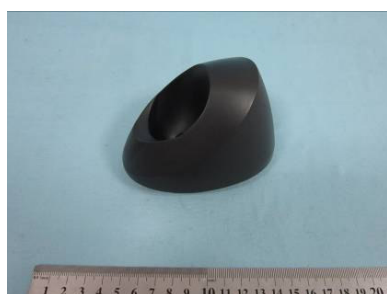
21#-18



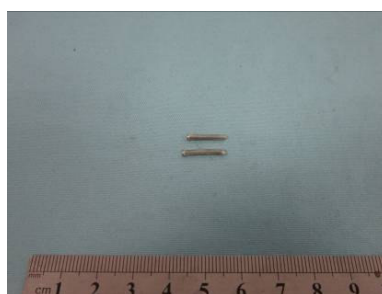
21#-19



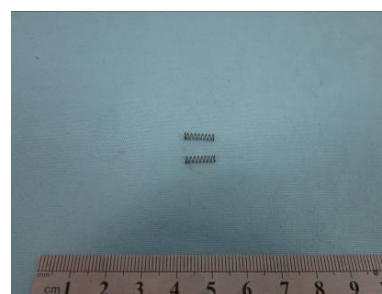
22#



22#-1



22#-2



22#-3

\*\*\*\*\* To be continued \*\*\*\*\*

# TEST REPORT

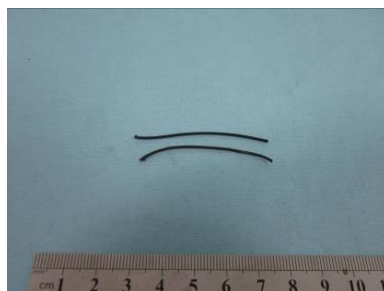
Reference No. : TRHZ1211024

Date : Nov. 29, 2012

Page No. : 30 of 30



22#-4



22#-5



22#-6



23#



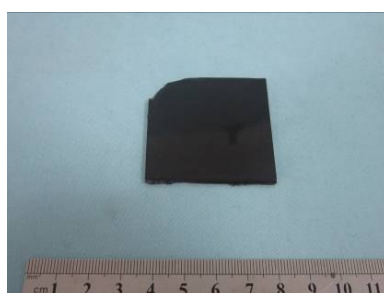
24#



25#



19#-7-R



21#-2-R



21#-3-R

\*\*\*\*\* END OF REPORT \*\*\*\*\*