

TEST REPORT

Test Report No. : 3178341B.50QS
Project no. : 3178341

Client : Nanjing TOMS weighing Instrument CO. Ltd
No.77 Baoshan road at Qilin town in Nanjing, Jiangsu Province, China

Date sample received : 2015.12.01 / 2015.12.22

Product : Electronic Balance

Product description : Please refer to next page(s).

Model : TM-EXG series

Test Requested : Test of RoHS conformity (2011/65/EU)

Test Method : Please refer to next page(s).

Result : Please refer to next page(s).

Conclusion : Requirement passed

Testing Period : 2015.12.01—2015.12.31

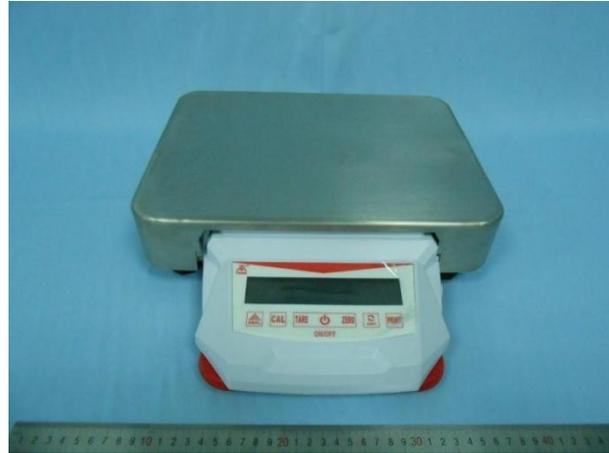
Signed for and on behalf of
DEKRA Testing and Certification (Shanghai) Ltd



Yu Feixiong (郁飞雄)
Project Manager

Shao Baijun (邵柏君)
Test Engineer

Picture of the product:



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* TEST RESULTS

sample no.	sample designation	Cd (%)	Pb (%)	Cr VI (%)	Hg (%)	PBB (%)	PBDE (%)
- 001	Silvery metal tray	< 0.01	< 0.1	< 0.1(b)	< 0.1	NA	NA
- 002	White plastic shell	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 003	Transparent plastic display	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 004	Orange plastic component	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 005	Black foam	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 006	Red plastic washer	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 007	Silvery plastic label	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 008	Black plastic washer	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 009	Silvery metal screw	< 0.01	< 0.1	< 0.1(b)	< 0.1	NA	NA
- 010	Black plastic holder	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 011 ^(R)	Black IC	< 0.01	< 0.1(a)	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 012	Transparent component	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 013	silvery metal ring	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 014	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 015	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 016	Yellow wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 017	Silvery metal wire	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 018	White plastic shell	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 019	Silvery metal shaft	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 020	Silvery metal contact sheet	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 021	Yellow base plate	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 022	White plastic slot	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 023	Silvery metal shell	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 024	Blue color ring resistor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 025	Yellow electronic component	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 026	Black IC	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 027	Black plastic holder	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 028	Solder	< 0.01	< 0.1(a)	< 0.1	< 0.1	NA	NA
- 029	Black triode	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 030	Black electrolytic capacitor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 031	Black glass display	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 032	Black IC	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 033	Black wind machine	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 034	White wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 035	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

sample -no.	sample designation	Cd (%)	Pb (%)	Cr VI (%)	Hg (%)	PBB (%)	PBDE (%)
- 036	Silvery metal bolt	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 037	Silvery metal gasket	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 038	Grey metal gasket	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 039	Yellow plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 040	Yellow wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 041	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 042	White wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 043	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 044	Blue wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 045	White weaving wire	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 046	Coppery metal wire	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 047	Grey wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 048	White foam	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 049	Transparent plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

(a) The analysis by X-ray fluorescence spectrometry showed a detection for Pb. The verification and quantification of Pb was performed by ICP-OES.

(b) The analysis by X-ray fluorescence spectrometry showed a detection for Cr. The verification and quantification of Cr VI was performed by photometric analysis.

(c) The analysis by X-ray fluorescence spectrometry showed a detection for Br. The verification and quantification of PBB/PBDE was performed by GC-MS.

* Test result was carried out in lab accredited by Dekra.

Description of the analysis procedure (brief version):

Test of RoHS conformity

The measurements are performed according to DIN EN 62321, "Electrotechnical products - Determination of levels of six regulated substances".

The product is divided in single material samples. The materials are analysed on different parameters of the RoHS-directive to assure that the complete product is RoHS-conform or not. At first a XRF (X-ray fluorescence spectrometry) screening is performed. For every sample following statements can be made.

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

Element	Polymers	Metals	Composite Material
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	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Below limit (**BL**): the tested material complies to the RoHS directive.

Inconclusive (**X**): If the level of the measurement is around the maximum allowed, or if the level for Chrome or Bromine is too high, other more accurate methods are needed to determine the exact level or the composition of Chrome and Bromine.

Over limit (**OL**): If the level of lead, mercury or cadmium is well above the maximum allowed levels (the XRF uncertainty is taken into account), the tested material does not comply with the RoHS directive.

In case of **inconclusive** XRF results, following analysis procedures are applied:

In order to examine the material samples for the heavy metals cadmium, lead and mercury they are digested in acid and the solutions are used to carry out the analysis for the heavy metals by ICP-OES or atomic-absorption spectroscopy.

Hexavalent chromium is checked by extracting the sample with water at 100 °C (determination of Cr VI in colorless and colored chromate coating on metals) respectively with alkaline extraction at 90-95 °C (determination of Cr VI in polymers and electronic components) followed by photometric analysis.

In the case of metallic components with a surface coating containing hexavalent Chromium (passivation) the concentration is expressed in mg of Chromium VI per component. In order to obtain further information about the concentration on the surface coating it is necessary to know the weight per unit area of the coating and the surface area of the component. Information about surface coatings is to be provided by the client.

The examination for bromine-based flame retardant products is carried out by gas chromatography-mass spectrometry after extraction by solvents; this involves the individual analysis and quantification of the substances specified in the RoHS. The current valid regulations relating to exceptions in respect of the analysed substances are to be taken into account by the client.

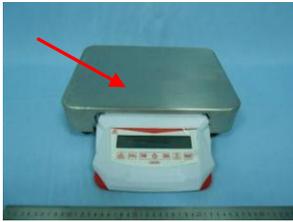
The following Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) are analyzed:

2-Bromobiphenyl PBB2, Dibromobiphenyl PBB15, Tribromobiphenyl PBB30, Tetrabromobiphenyl PBB52, Pentabromobiphenyl PBB103, Hexabromobiphenyl PBB153, Heptabromobiphenyl PBB250, Octabromobiphenyl PBB250, Nonabromobiphenyl PBB250, Decabromobiphenyl PBB209, Bromodiphenylether BDE2, Dibromodiphenylether BDE15, Tribromodiphenylether BDE30, Tetrabromodiphenylether BDE62, Pentabromodiphenylether BDE99, Hexabromodiphenylether BDE153, Heptabromodiphenylether BDE183, Octabromodiphenylether BDE203, Nonabromodiphenylether BDE206, Decabromodiphenylether BDE209.

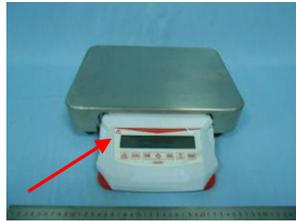
Limits according to RoHS (2011/65/EU) / Test methods (additional chemical analysis):

Parameter	Limits according to RoHS	Test method
Cadmium	0,01 % (100 mg/kg or 0,1 g/kg)	IEC62321-5:2013
Lead	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-5:2013
Hexavalent Chromium	0,1 % (1000 mg/kg or 1 g/kg)	Metal: IEC62321-7-1:2015 Non-metal: IEC62321:2008
Mercury	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-4:2013
PBB and PBDE	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-6:2015

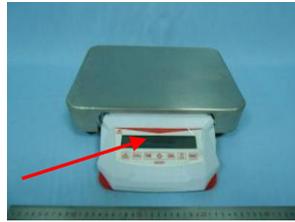
Sample Photos



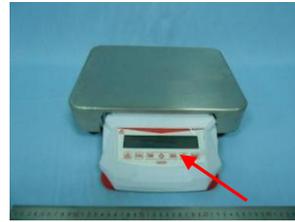
Test Item 1



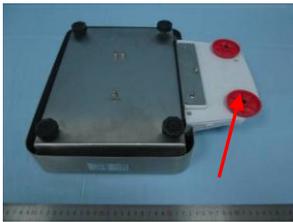
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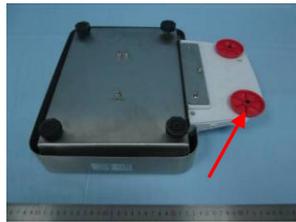
Test Item 3



Test Item 4



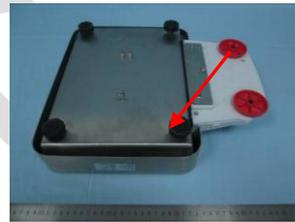
Test Item 5



Test Item 6



Test Item 7



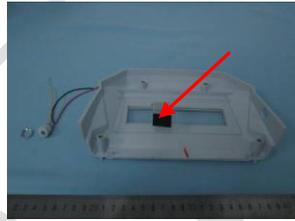
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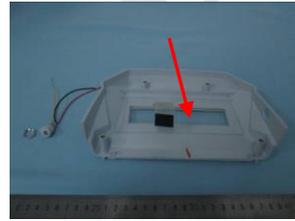
Test Item 9



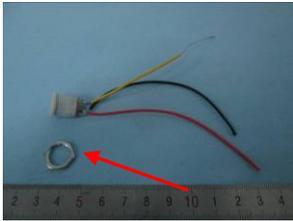
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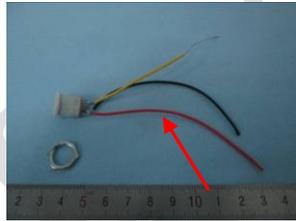
Test Item 11



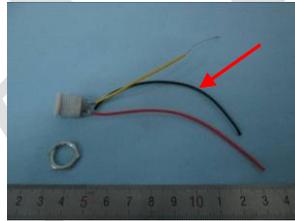
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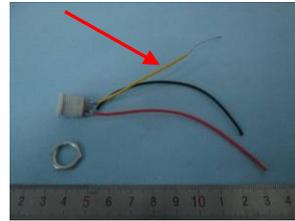
Test Item 13



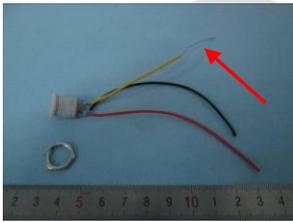
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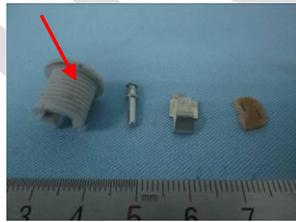
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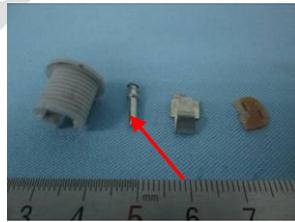
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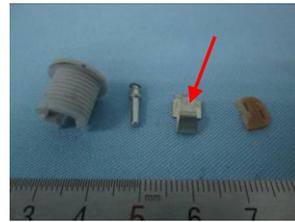
Test Item 17



Test Item 18



Test Item 19



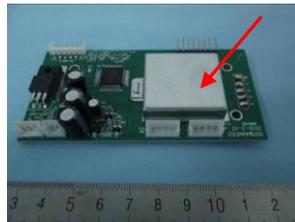
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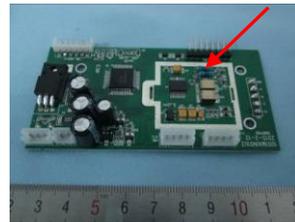
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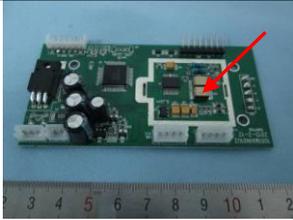
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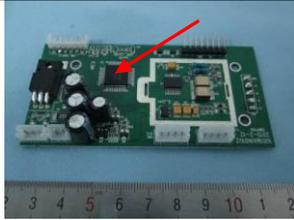
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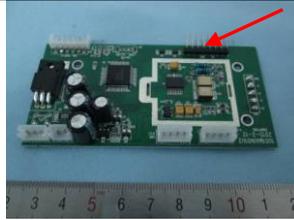
Test Item 24



Test Item 25



Test Item 26



Test Item 27



Test Item 28



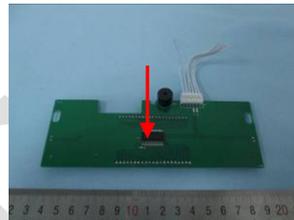
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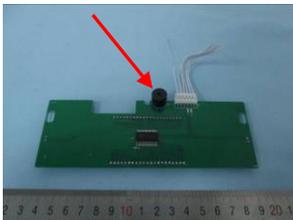
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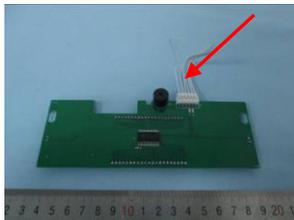
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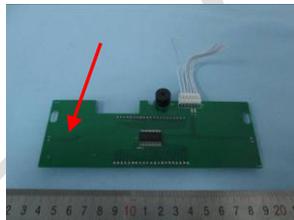
Test Item 32



Test Item 33



Test Item 34



Test Item 35



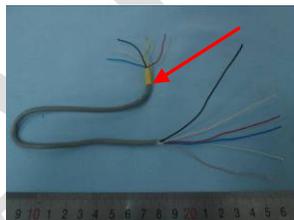
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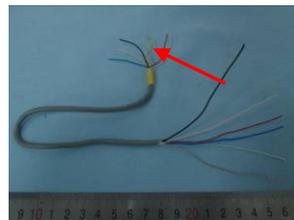
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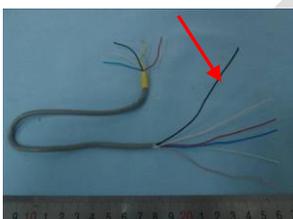
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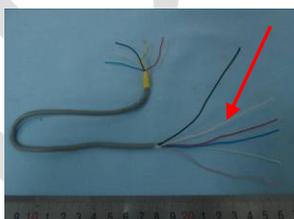
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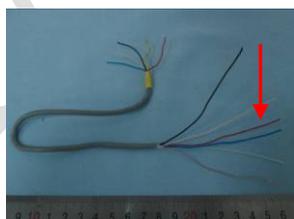
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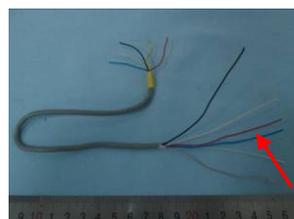
Test Item 41



Test Item 42



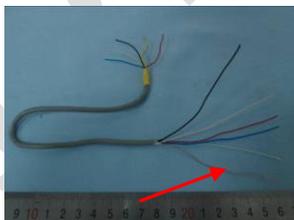
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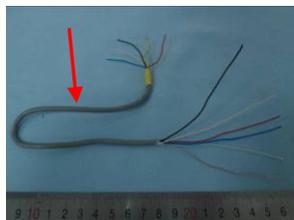
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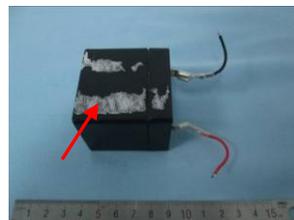
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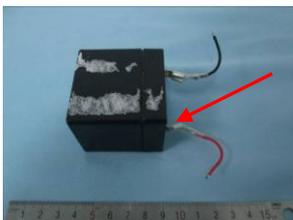
Test Item 46



Test Item 47



Test Item 48



Test Item 49



Test Item 11-(R)

---End of Report---

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