

Test Report

Report No.: 180814123GZU-012

Date: Sep 18, 2018

Applicant: AILUN ELECTRONIC TECHNOLOGY (H.K) LIMITED
1001R.10F TAIYOU BUILDING.181 FOHNSTON ROAD,
WANCHAI HK

Sample Description:

The following submitted sample(s) said to be:

Item Name : **Metal Film Resistor**
Model No. : NA
Additional Info. : IKEA's Supplier Code: 2452
Date of Sample Received : Aug 30, 2018
Testing Period : Aug 30, 2018 to Sep 13, 2018

Tests conducted:

As requested by the applicant, refer to following page(s) for details.

Comment:

The results of tested component(s) do not exceeded the limit of Lead (Pb) of IKEA Specification IOS-PRG-0027 Version No. AA-224712-5, whereas did not exceed the limits of Cadmium (Cd), Mercury (Hg), Chromium (VI) (Cr6+), Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs) of IKEA Specification IOS-PRG-0027 Version No. AA-224712-5.

| Tested Sample | Standard | Result |
|---------------------------------------|---|--------|
| Tested components of submitted sample | Phthalates content based on RoHS Directive 2011/65/EU and (EU) 2015/863 | Pass |

Authorized by:

For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch:




Martin He
Senior Project Engineer



Test Report

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RoHS Chemical Test

Tested Components:

- (1) Resistor
 - (1a) Ceramic with coatings
 - (1b) Silver color metal (pin)

Part A:

(A) Test Result Summary (For IKEA Specification IOS-PRG-0027 Version No. AA-224712-5):

| Testing Item | Result |
|--|-------------|
| | (1a) |
| Cadmium (Cd) Content (mg/kg) | ND |
| Lead (Pb) Content (mg/kg) | ND |
| Mercury (Hg) Content (mg/kg) | ND |
| Chromium (VI)(Cr ⁶⁺) Content (mg/kg) (For Non-metal) | ND |
| Polybrominated Biphenyls (PBBs)(mg/kg) | |
| Monobromobiphenyl (MonoBB) | ND |
| Dibromobiphenyl (DiBB) | ND |
| Tribromobiphenyl (TriBB) | ND |
| Tetrabromobiphenyl (TetraBB) | ND |
| Pentabromobiphenyl (PentaBB) | ND |
| Hexabromobiphenyl (HexaBB) | ND |
| Heptabromobiphenyl (HeptaBB) | ND |
| Octabromobiphenyl (OctaBB) | ND |
| Nonabromobiphenyl (NonaBB) | ND |
| Decabromobiphenyl (DecaBB) | ND |
| Polybrominated Diphenyl Ethers (PBDEs)(mg/kg) | |
| Monobromodiphenyl Ether (MonoBDE) | ND |
| Dibromodiphenyl Ether (DiBDE) | ND |
| Tribromodiphenyl Ether (TriBDE) | ND |
| Tetrabromodiphenyl Ether (TetraBDE) | ND |
| Pentabromodiphenyl Ether (PentaBDE) | ND |
| Hexabromodiphenyl Ether (HexaBDE) | ND |
| Heptabromodiphenyl Ether (HeptaBDE) | ND |
| Octabromodiphenyl Ether (OctaBDE) | ND |
| Nonabromodiphenyl Ether (NonaBDE) | ND |
| Decabromodiphenyl Ether (DecaBDE) | ND |

| Testing Item | Result |
|---|----------------------|
| | (1b) |
| Cadmium (Cd) Content (mg/kg) | ND |
| Lead (Pb) Content (mg/kg) | ND |
| Mercury (Hg) Content (mg/kg) | ND |
| Chromium (VI)(Cr ⁶⁺) Result (By Boiling Water Extraction on Metal)(µg/cm ²) | < 0.10 (Negative) |

mg/kg = milligram per kilogram based on dry weight of sample = ppm
ND = Not detected



(B) IKEA Requirement:

| Substance | Metal | Plastics and Other Polymeric | Ceramics and Glass | Other Materials(Including Surface Coating) |
|--|----------------------|------------------------------|----------------------|--|
| Cadmium (Cd) | 0.01% (100 mg/kg) | 0.01% (100 mg/kg) | 0.01% (100 mg/kg) | 0.01% (100 mg/kg) |
| Lead (Pb) | 0.1% (1000 mg/kg) | 0.03% (300 mg/kg) | 0.1% (1000 mg/kg) | 0.1% (1000 mg/kg) |
| Mercury (Hg) | 0.01% (100 mg/kg) | 0.005% (50 mg/kg) | 0.005% (50 mg/kg) | 0.005% (50 mg/kg) |
| Chromium (VI) (Cr ⁶⁺) | Negative | 0.1% (1000 mg/kg) | 0.1% (1000 mg/kg) | 0.1% (1000 mg/kg) |
| Polybrominated Biphenyls (PBBs) | - | 0.1% (1000 mg/kg) | - | 0.1% (1000 mg/kg) |
| Polybrominated Diphenyl Ethers (PBDEs) | - | 0.1% (1000 mg/kg) | - | 0.1% (1000 mg/kg) |

(C) Test Method:

| Testing Item | Testing Method | Reporting Limit |
|---|--|-------------------------|
| Cadmium (Cd) Content | With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES | 2 mg/kg |
| Lead (Pb) Content | With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion and determined by ICP - OES | 2 mg/kg |
| Mercury (Hg) Content | With reference to IEC 62321-4 Edition 1.0:2013, by acid digestion and determined by ICP - OES | 2 mg/kg |
| Chromium (VI)(Cr ⁶⁺) Content | With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer | 1 mg/kg |
| Chromium (VI)(Cr ⁶⁺) Content | With reference to IEC 62321-7-1 edition 1.0:2015, by boiling water extraction and determined by UV-VIS spectrophotometer | 0.10 µg/cm ² |
| Polybrominated Biphenyls (PBBs)& Polybrominated Diphenyl Ethers (PBDEs) | With reference to IEC 62321-6 edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary | 5 mg/kg |



Part B:

RoHS Chemical Test

(A) Test Result Summary:

| Testing Item | Result |
|----------------------------------|--------|
| | (1a) |
| Phthalates(mg/kg) | |
| Bis(2-ethylhexyl)phthalate(DEHP) | ND |
| Butyl benzyl phthalate(BBP) | ND |
| Dibutyl phthalate(DBP) | ND |
| Diisobutyl phthalate(DIBP) | ND |

ND = Not detected
mg/kg= milligram per kilogram

(B) RoHS Requirement:

| Restricted Substances | Limits |
|----------------------------------|-------------------|
| Phthalates(DEHP, BBP, DBP, DIBP) | 0.1% (1000 mg/kg) |

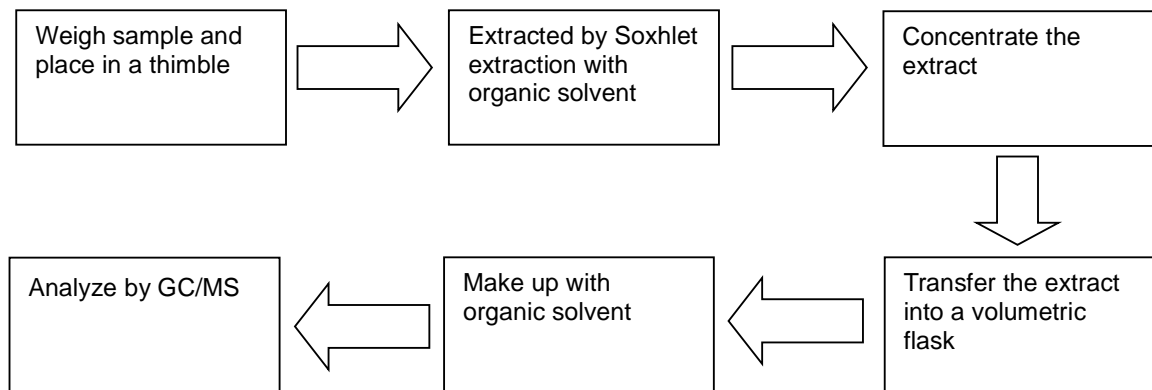
The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.

(C) Test Method:

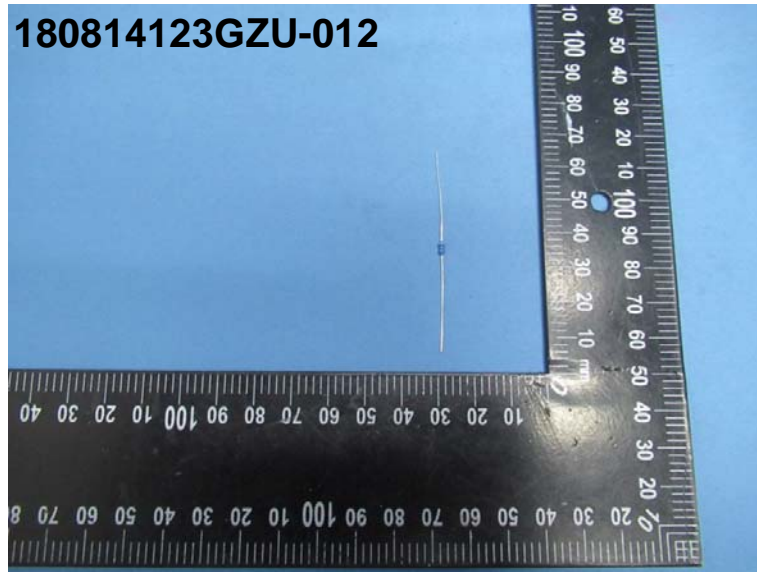
| Testing Item | Testing Method | Reporting Limit |
|--|---|-----------------|
| Phthalates(DEHP, BBP, DBP, DIBP) Content | With reference to IEC 62321-8 Edition 1.0:2017, by solvent extraction and determined by GC/MS | 100mg/kg |

(D) Measurement Flowchart:

Test for Phthalate Contents



Sample photo



End of report

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