



Test Report

Number: SHAH00627630S1

Applicant: RAYCHEM ELECTRONICS (SHANGHAI) LTD.
NO.307 QIN JIANG ROAD SHANGHAI P.R CHINA
Attn: SHEN YUE DONG

Date: Dec 22, 2015

THIS IS TO SUPERSEDE REPORT NO.
SHAH00627630 DATED 07 Dec, 2015

Sample Description:

One(1) group of submitted sample said to be **INK**
Item Name : RP-3 INK
Lot No. : 150915629

Tests Conducted:

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

Conclusion:

| <u>Tested Sample</u> | <u>Standard</u> | <u>Result</u> |
|--------------------------------------|---|--------------------|
| Tested component of submitted sample | Restriction of the use of certain hazardous substance in electrical and electronic equipment (RoHS Directive 2011/65/EU) | Pass |
| Tested component of submitted sample | Halogen (F, Cl, Br, I) content | See Test Conducted |
| | Phthalates content requirement in Annex XVII items 51 & 52 of the REACH regulation (EC) NO. 1907/2006 & Amendment NO.552/2009 | Pass |
| | PFOS and PFOA content | See Test Conducted |

To be continued

Authorized By:
For Intertek Testing Services Ltd., Shanghai

Leo Shi
General Manager



Tests Conducted

1. (A) Test result of RoHS Directive: _

| Testing Item | Result |
|--|--------|
| | (1) |
| 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) | |
| monobromo biphenyls (MonoBB) | ND |
| Dibromo biphenyls (DiBB) | ND |
| Tribromo biphenyls (TriBB) | ND |
| Tetrabromo biphenyls (TetraBB) | ND |
| Pentabromo biphenyls (PentaBB) | ND |
| Hexabromo biphenyls (HexaBB) | ND |
| Heptabromo biphenyls (HeptaBB) | ND |
| Octabromo biphenyls (OctaBB) | ND |
| Nonabromo biphenyls (NonaBB) | ND |
| Decabromo biphenyl (DecaBB) | ND |
| Polybrominated diphenyl ethers (PBDEs) (mg/kg) | |
| Monobromo diphenyl ethers (MonoBDE) | ND |
| Dibromo diphenyl ethers (DiBDE) | ND |
| Tribromo diphenyl ethers (TriBDE) | ND |
| Tetrabromo diphenyl ethers (TetraBDE) | ND |
| Pentabromo diphenyl ethers (PentaBDE) | ND |
| Hexabromo diphenyl ethers (HexaBDE) | ND |
| Heptabromo diphenyl ethers (HeptaBDE) | ND |
| Octabromo diphenyl ethers (OctaBDE) | ND |
| Nonabromo diphenyl ethers (NonaBDE) | ND |
| Decabromo diphenyl ether (DecaBDE) | ND |
| Phthalates(mg/kg) | |
| Bis(2-ethylhexyl)phthalate(DEHP) | ND |
| Butyl benzyl phthalate(BBP) | ND |
| Dibutyl phthalate(DBP) | ND |
| Diisobutyl phthalate(DIBP) | ND |

Remark: ND = Not Detected

To be continued

Tests Conducted

(B) RoHS Requirement:

| Restricted Substances | Limits |
|--|-------------------|
| Cadmium (Cd) | 0.01% (100 mg/kg) |
| Lead (Pb) | 0.1% (1000 mg/kg) |
| Mercury (Hg) | 0.1% (1000 mg/kg) |
| Chromium (VI) (Cr ⁶⁺) | 0.1% (1000 mg/kg) |
| Polybrominated biphenyls (PBBs) | 0.1% (1000 mg/kg) |
| Polybrominated diphenyl ethers (PBDEs) | 0.1% (1000 mg/kg) |

The above limits were quoted from RoHS Directive 2011/65/EU for homogeneous material.

(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 until the tested sample was totally dissolved, and determined by ICP-OES. | 2 mg/kg |
| Lead (Pb) content | With reference to IEC 62321-5 Edition 1.0: 2013, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES. | 2 mg/kg |
| Mercury (Hg) content | With reference to IEC 62321-4 Edition 1.0: 2013, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES. | 2 mg/kg |
| Chromium (VI) (Cr ⁶⁺) content (for non-metal) | With reference to IEC 62321 Edition 1.0: 2008, by alkaline digestion and determined by UV-VIS Spectrophotometer. | 1mg/kg |
| Polybrominated biphenyls (PBBs)& polybrominated diphenyl ethers (PBDEs) | With reference to IEC 62321 Edition 1.0: 2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary. | 5 mg/kg |
| Phthalates (DEHP, BBP, DBP, DIBP) Content | With reference to EN 14372-2004/CPSC-CH-C1001-09.3, by solvent extraction and determined by GC/MS | 100mg/kg |

Tested Components: See component list in the last section of this report.

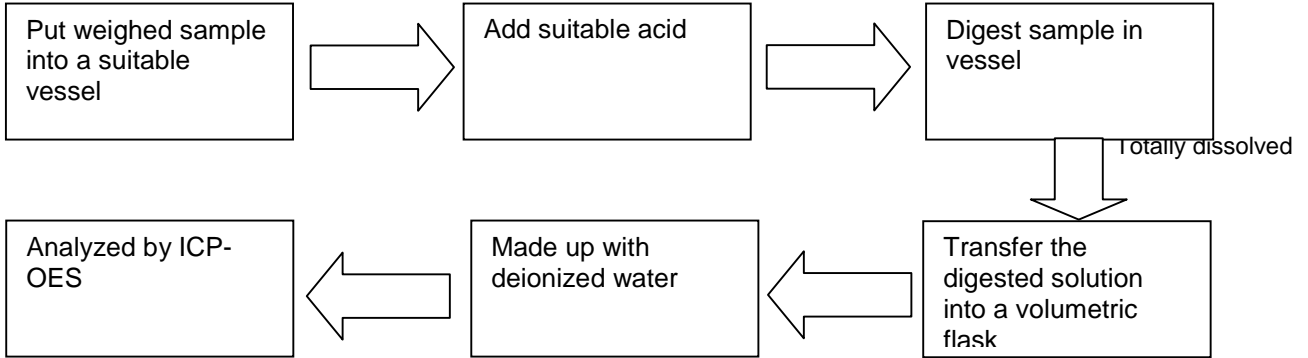
Date Sample Received: Dec.2, 2015

Testing Period: Dec.2, 2015 To Dec.4, 2015

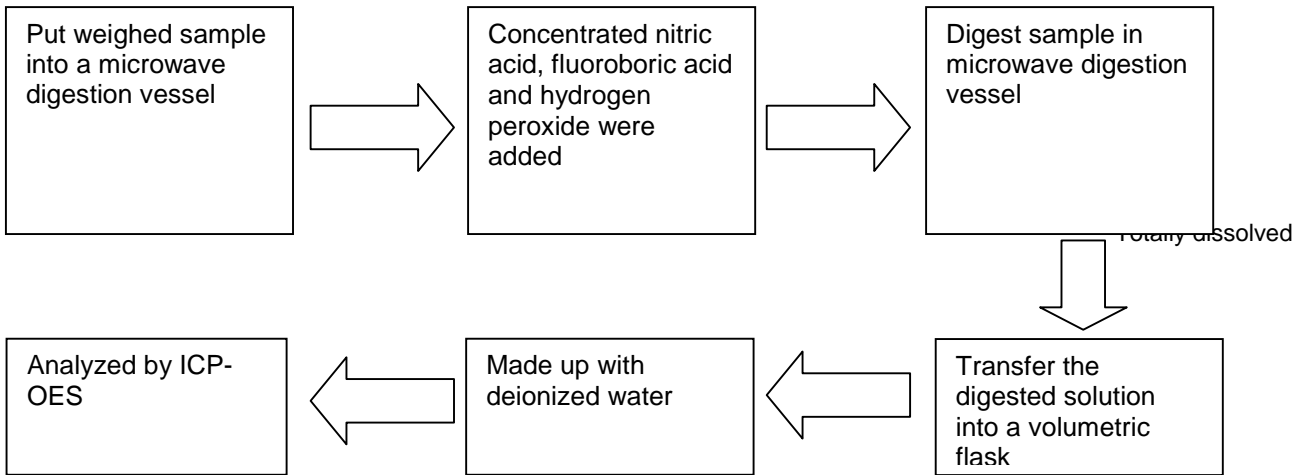
To be continued

Tests Conducted
(D)Measurement Flowchart:

1. Test for Cd/Pb Contents



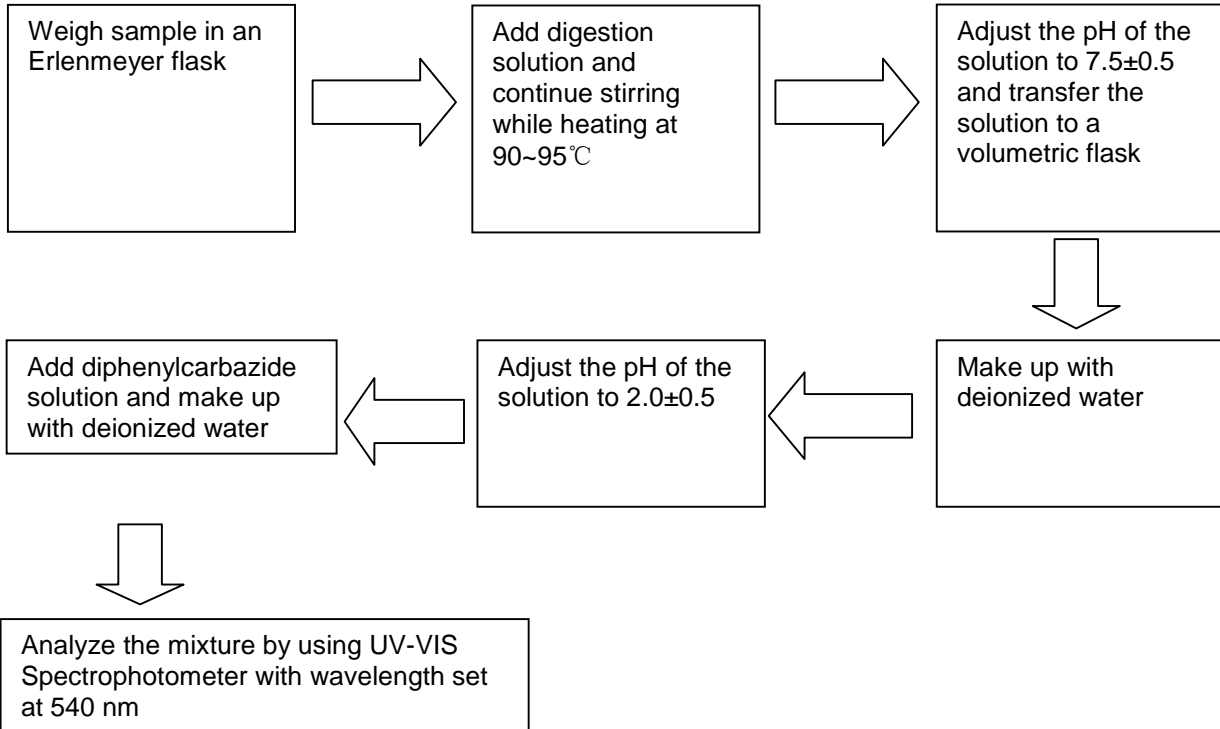
2. Test for Hg Content



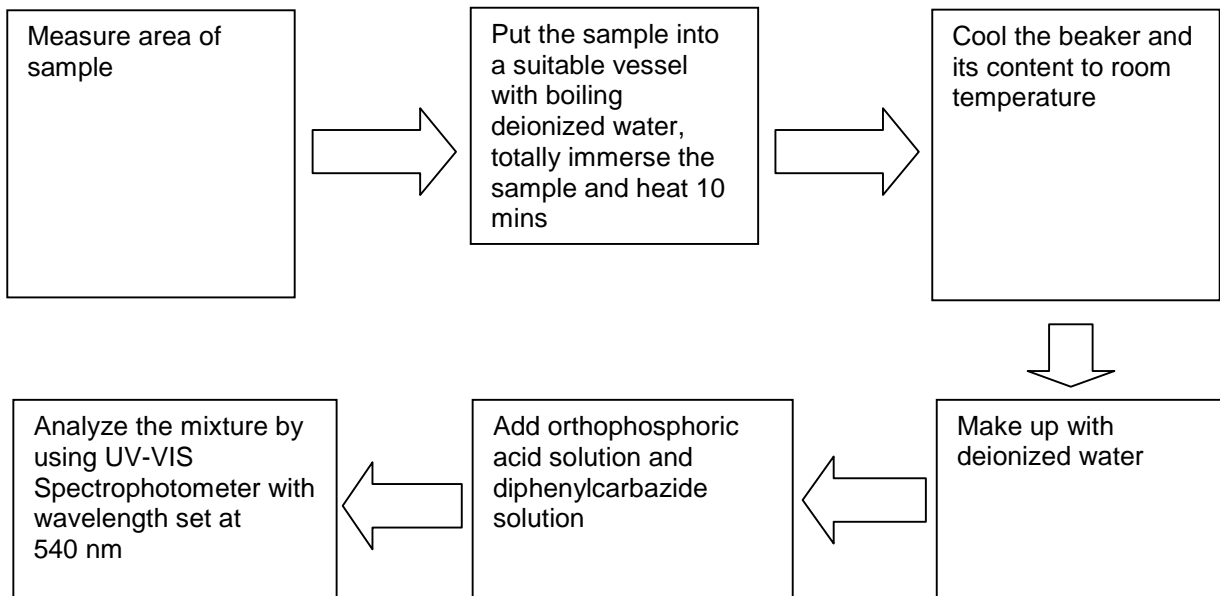
To be continued

Tests Conducted

3. Test for Chromium (VI) (Cr^{6+}) Content (Alkaline Digestion)



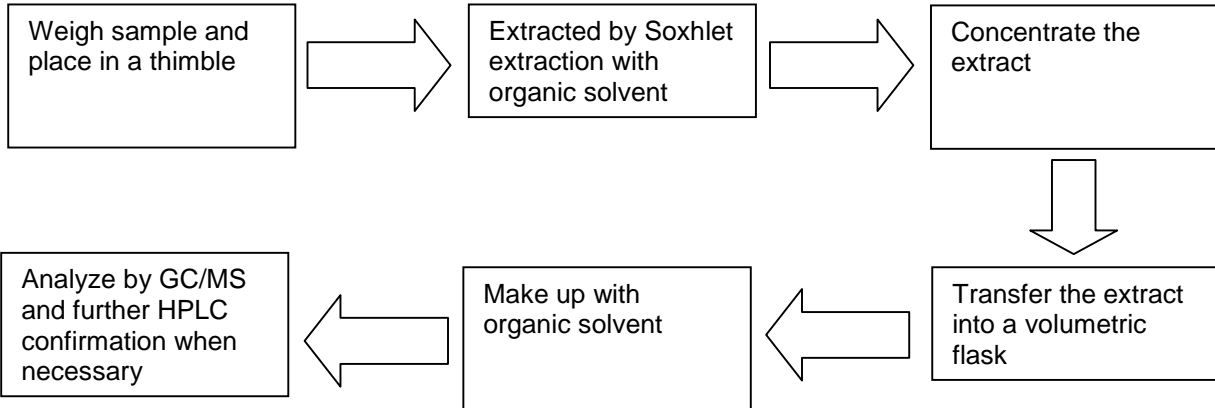
4. Test for Chromium (VI) (Cr^{6+}) Content (Boiling Water Extraction)



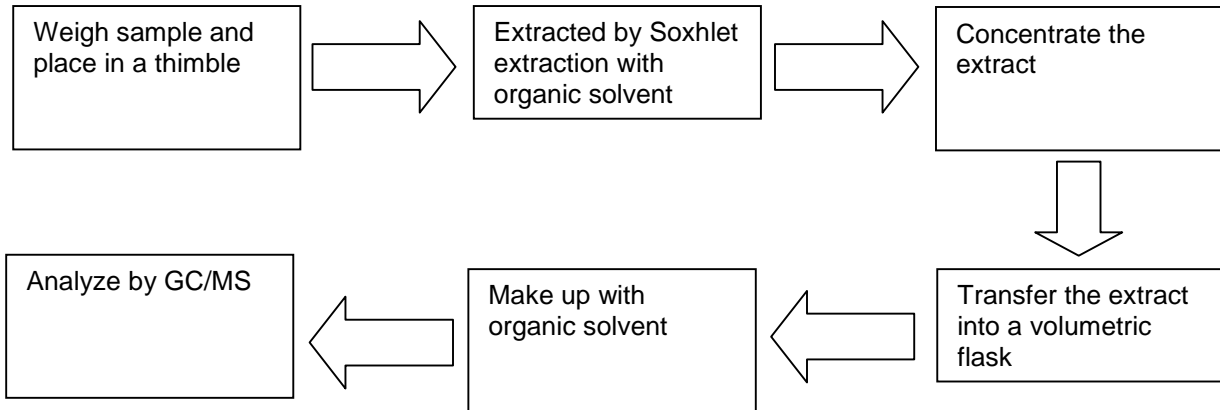
To be continued

Tests Conducted

5. Test for PBBs/PBDEs Contents



6. Test for Phthalate Contents



To be continued

Tests Conducted

2. Halogen Test

I . Test result summary

Halogen content :

| Testing Item | Result (ppm) |
|-----------------------|--------------|
| | (1) |
| Fluorine (F) content | ND |
| Chlorine (Cl) content | ND |
| Bromine (Br) content | ND |
| Iodine (I) content | ND |

Remark: ppm = Parts per million = mg/kg
 ND = Not Detected

II . Test method

| Testing Item | Testing Method | Reporting Limit |
|--------------------------------|---|-----------------|
| Halogen (F, Cl, Br, I) content | With reference to EN 14582:2007 by combustion in a calorimetric bomb and determined by ion chromatography | 50 ppm |

Remarks: Reporting limit = Quantitation limit of analyte in sample

Date Sample Received: Dec.2, 2015

Testing Period: Dec.2, 2015 To Dec.4, 2015

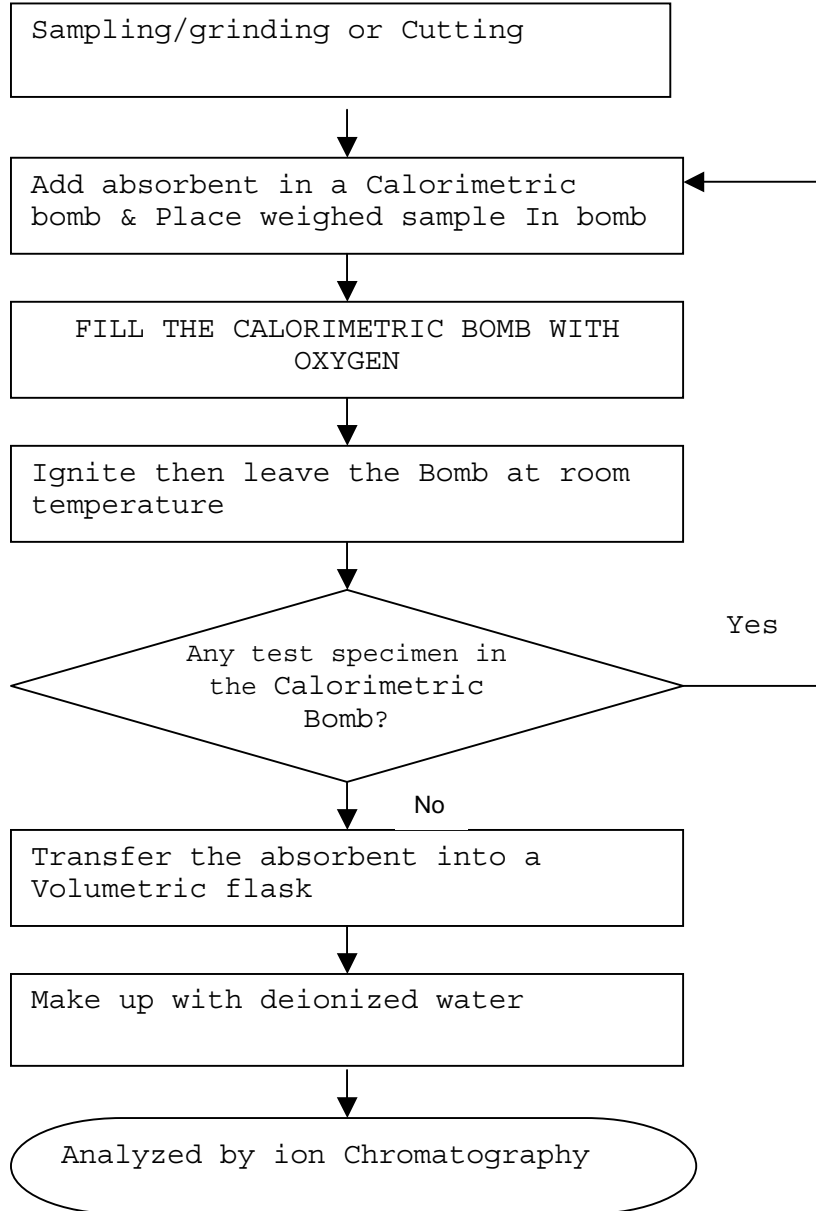
 To be continued

Tests Conducted

(III) Measurement flowchart:

Test for Halogen content

Reference method: EN 14582: 2007



To be continued

Tests Conducted

3. Phthalate content test

With reference to EN 14372, by Gas Chromatography-Mass Spectrometry (GC-MS) analysis.

| <u>Tested compound</u> | <u>Result (%.w/w)</u> | <u>Limit(%.w/w)</u> <u>(MAX.)</u> |
|-----------------------------------|-----------------------|--------------------------------------|
| | (1) | |
| Di-butyl phthalate (DBP) | ND | --- |
| Di(2-ethyl hexyl) phthalate(DEHP) | ND | --- |
| Benzyl butyl phthalate (BBP) | ND | --- |
| Sum of three phthalates | ND | 0.1 |
| Di-iso-nonyl phthalate (DINP) | ND | --- |
| Di-n-octyl phthalate (DNOP) | ND | --- |
| Di-iso-decyl phthalate (DIDP) | ND | --- |
| Sum of three phthalates | ND | 0.1 |

Remark: The above limit was quoted according to Annex XVII items 51 & 52 of the REACH regulation (EC) NO.1907/2006 & Amendment NO.552/2009 for phthalate content in toys and children care articles.

Detection limit = 0.01%(w/w)
ND = Not detected

Tested components: See component list in the last section of this report.

Date Sample Received: Dec.2, 2015

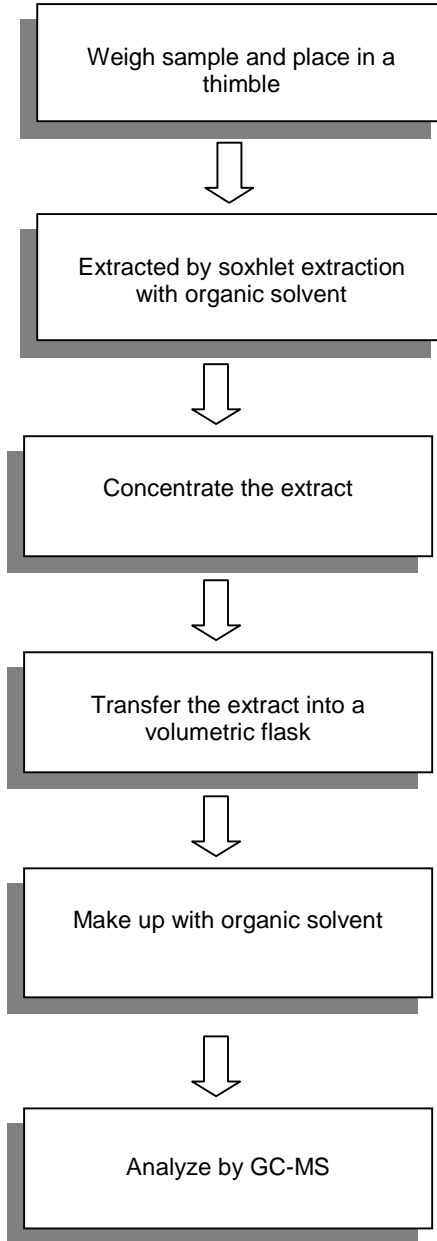
Testing Period: Dec.2, 2015 To Dec.4, 2015

To be continued

Tests Conducted

Measurement flowchart:

Test for phthalate content



To be continued



Test Report

Number: SHAH00627630S1

Tests Conducted

4. Perfluorooctane Sulfonates (PFOS) And Perfluorooctanoic Acid (PFOA) Content

By solvent extraction and followed by Liquid Chromatography-Mass Spectrometry (LC-MS) analysis.

| <u>Compound</u> | <u>Result (ppm)</u> |
|-----------------------------------|---------------------|
| Perfluorooctane sulfonates(PFOS)# | ND |
| Perfluorooctanoic acid(PFOA) | ND |

Remark: Detection Limit = 0.1ppm

ppm = Parts per million = mg/kg

ND = Not Detected

= The reported value was calculated by summation of the values of Perfluorooctanesulfonic Acid, Perfluorooctanesulfonamide, N-Methyl-Perfluorooctanesulfonamide, N-Ethyl-Perfluorooctanesulfonamide, N-Methyl-Perfluorooctanesulfonamidoethanol and N-Ethyl-Perfluorooctanesulfonamidoethanol.

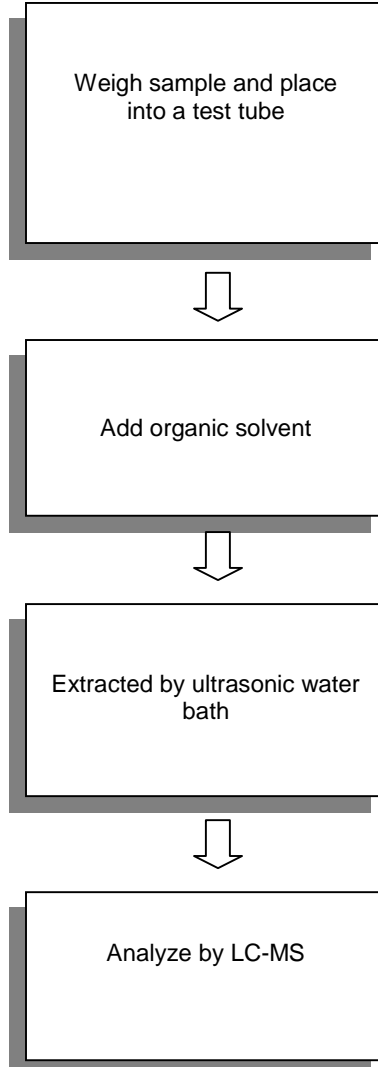
Tested Components: See component list in the last section of this report.

To be continued

Tests Conducted

Measurement flowchart:

Test for Perfluorooctane Sulfonates(PFOS)and Perfluorooctanoic Acid (PFOA) content:



To be continued

Tests Conducted



Picture of sample

Date Sample Received: Dec.2, 2015
Testing Period: Dec.2, 2015 To Dec.4, 2015

Components List:

- (1) INK

End of report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct.



To: RAYCHEM ELECTRONICS (SHANGHAI) LTD.
Attention: SHEN YUE DONG

Date: Dec 22, 2015

Re: Report Revision Notification

Intertek Testing Services Report Number SHAH00627630 Dated Dec 7, 2015.

Please be informed that all the content recorded in the above captioned report will be void. This captioned report is now superseded by a revised Intertek Testing Services Report Number **SHAH00627630S1**.

Thank you for your attention.

Authorized By:
For Intertek Testing Services Ltd., Shanghai

Leo Shi
General Manager



Intertek Testing Services Ltd., Shanghai

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