




# TEST REPORT

|   |  |  |
|---|--|--|
|  <b>SNS EMC Laboratory Co., Ltd.</b><br>(#B09, #B11, Ojeon-dong), 19, Ojeonggonggeop-gil,<br>Uiwang-si, Gyeonggi-do, 16072 Korea<br>Tel : +82-31-526-2001<br>Fax : +82-31-455-2066<br><a href="http://www.snsemc.co.kr">http://www.snsemc.co.kr</a> | Report No. :<br>RoHS-N2009006<br>Page (1)/(31) |  |
|---|--|--|

**1. Client**

- Name : INB KOREA LTD.
- Address : 72,JOMARU-RO 411 BEON-GIL, BUCHEON-SI, GYEONGGI-DO, SOUTH KOREA

**2. Manufacturer : INB KOREA LTD.**

**3. Product Name : Air Purifier**


**4. Model Name : HEXTIO, HX-100**

**5. Date of Test : Sep 21, 2020**

**6. Test Method Used : EN 50581:2012, IEC 62321-1:2013, IEC 62321-3-1:2013, EN 62321:2009  
IEC 62321-8:2017**

**7. Test Results : Pass**

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.  
 This laboratory is not accredited for the test results marked \*.

|             |   |   |
|-------------|---|---|
| Affirmation | Tested by<br><br>Name : Kyungman, Kwak (Signature) | Technical Manager<br><br>Name : Sangmin, Lee (Signature) |
|-------------|---|---|

2020-09-21  
**SNS EMC Laboratory Co., Ltd.**  




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**RoHS TEST REPORT**  
**European Directive 2011/65/EU**  
**Evaluation of RoHS Requirements for Electrical and Electronic Equipment**

|  |   |
|--|---|
| <b>Report Number</b> .....   | RoHS-N2009006   |
| <b>Date of issue</b> .....   | Sep 21, 2020  |
| <b>Total number of pages</b> .....   | 31 Pages  |
| <b>Applicant name</b> .....  | INB KOREA LTD.  |
| <b>Address</b> .....   | 72,JOMARU-RO 411 BEON-GIL, BUCHEON-SI, GYEONGGI-DO,<br>SOUTH KOREA                        |
| <b>Manufacturer name</b> .....   | INB KOREA LTD.  |
| <b>Address</b> .....   | 72,JOMARU-RO 411 BEON-GIL, BUCHEON-SI, GYEONGGI-DO,<br>SOUTH KOREA                        |
| <b>Test specification:</b>   |   |
| <b>Standard</b> .....  | EN 50581:2012, IEC 62321-1:2013, IEC 62321-3-1:2013,<br>EN 62321:2009, IEC 62321-8:2017   |
| <b>Non-standard test method</b> .....  | N/A   |
| <b>Testing Laboratory</b> .....  | SNS EMC Laboratory Co., Ltd.  |
| <b>Address</b> .....   | (#B09, #B11, Ojeon-dong), 19, Ojeonggonggeop-gil, Uiwang-si,<br>Gyeonggi-do, 16072, Korea |
| <b>Product name</b> .....  | Air Purifier  |
| <b>Model name</b> .....  | <b>HEXTIO, HX-100</b>   |
| <b>List of Attachments (including a total number of pages in each attachment):</b> |   |
| Attachment 1   |   |
| Attachment 2   |   |
| <b>Testing:</b>  |   |
| <b>Date of receipt of test item</b> .....  | Sep 13, 2020  |
| <b>Date (s) of performance of tests</b> .....                                      | Sep 14, 2020 ~ Sep 19, 2020   |

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| Clause   | Requirement + Test  | Result - Remark       | Verdict |
|----------|---|-----------------------|---------|
| <b>1</b> | <b>RoHS Compliance based on test reports</b>  |                       |         |
| 1.1      | Review of component's test reports according to BOM   |                       | P       |
| 1.1.1    | Dose evaluated product is composed by components which is listed in BOM?  | Checked               | P       |
| 1.1.2    | Dose each components is complied with the requirement of employed directive or manufacturer declared limits?  | Checked               | P       |
| 1.2      | Review of verification test reports according sampling  |                       | P       |
| 1.2.1    | If it was performed the item 1.1, did sampling was performed in appropriate?  | Refer to Attachment 3 | P       |
| 1.2.2    | If it was not performed the item 1.1, did it was fully considered the materials of component and dose it was performed the sampling which is enough to represent the characteristics of population? |                       | N/A     |
| 1.2.3    | Is it complied with the requirements of employed directive or manufacturer declares limits for sample tested?   |                       | P       |
| 1.3      | Requirements of test report   |                       | P       |
| 1.3.1    | Is it included the information of manufacturer, sample, test lab or etc?  | Refer to Attachment 2 | P       |
| 1.3.2    | Is it clarly specified the test object as the port of components or product?  |                       | P       |
| 1.3.3    | Is it decribed the information of directive or standards of test methods?   |                       | P       |
| 1.3.4    | Is it decribed the results with accurately for interpretation, using or etc?  |                       | P       |
| 1.3.5    | Is it confirmed the validity of test equipment and information of calibration?  |                       | P       |
| 1.4      | Other information   |                       |         |
|          | Directive 2011/65/EU<br>EN 50581:2012<br>IEC 62321-1:2013<br>IEC 62321-3-1:2013<br>EN 62474:2012<br>IEC 62321-8:2017<br>IEC/TR 62476:2010   |                       |         |

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**Attachment 1 – Photographs**



**Front View**



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**Attachment 1 – Photographs**



**Inner View**



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## Attachment 2 – Test method & Lab Information

### 1. General

1.1 Standard : EN 50581:2012, EN 62321-1:2013, EN 61321-3-1, IEC 62321-8:2017

1.2 Applied sampling criteria

- Kind of components could be disassembled mechanically by using disassembly tools
- High risk components

### 2. Laboratory information

2.1 Laboratory name : SNS EMC Laboratory Co., Ltd.

2.2 Address : (#B09, #B11, Ojeon-dong), 19, Ojeonggonggeop-gil, Uiwang-si, Gyeonggi-do, 16072, Korea

2.3 Tel. : +82-31-526-2001

2.4 FAX : +82-31-455-2066

2.5 Facilities used

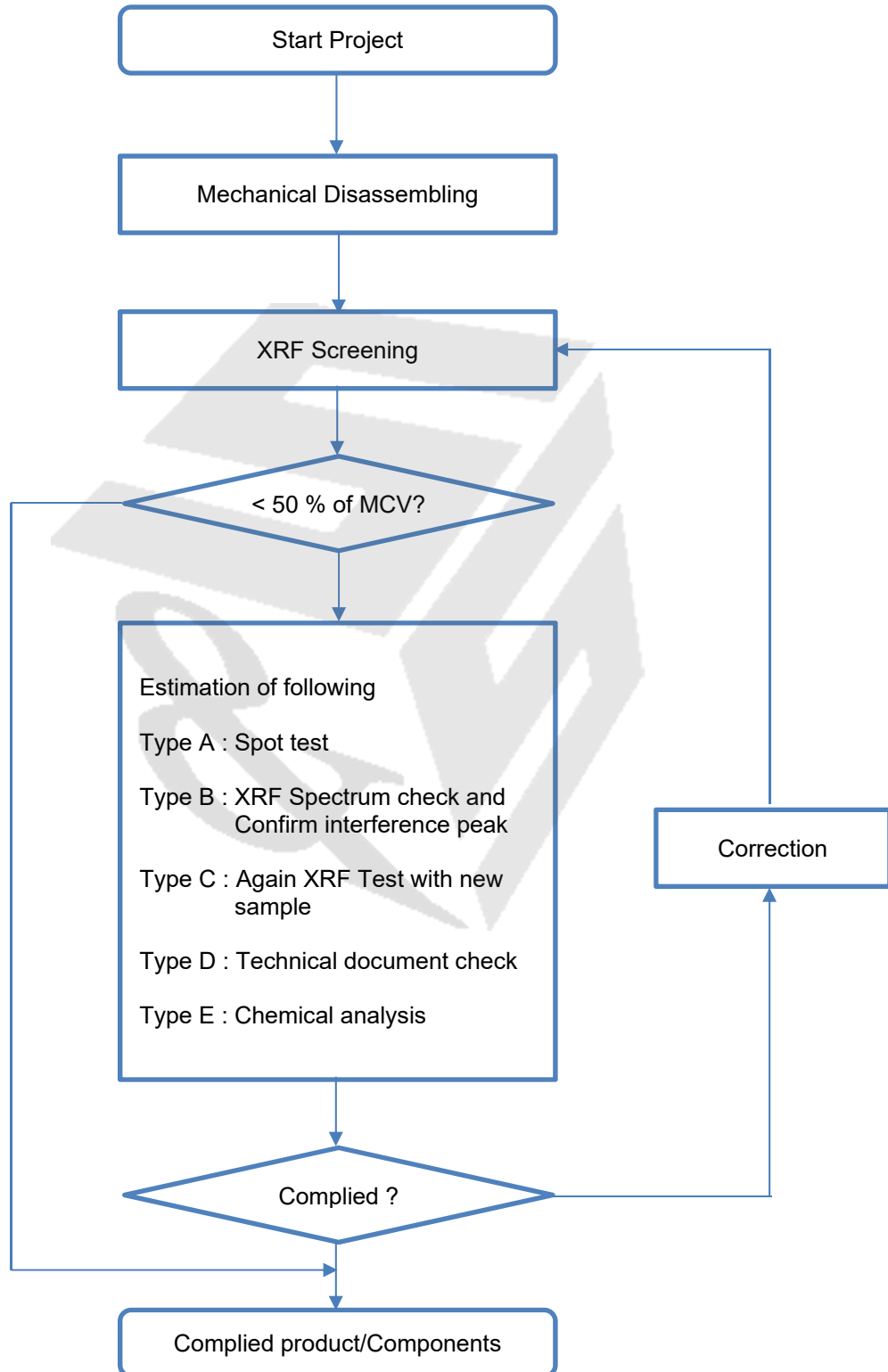
- X-Ray Fluorescence Spectrometer (XRF)
- Manufacturer name : ISP Co., Ltd.
- Model name : iEDX-100A

### 3. Product Remark

|                      |                    |                       |
|----------------------|--------------------|-----------------------|
| <b>Specification</b> | Product name       | Air Purifier          |
|                      | Model name         | <b>HEXTIO, HX-100</b> |
|                      | Variant model name | HXW-100, HWB-100      |



**Attachment 3 – Verification XRF Test Result**

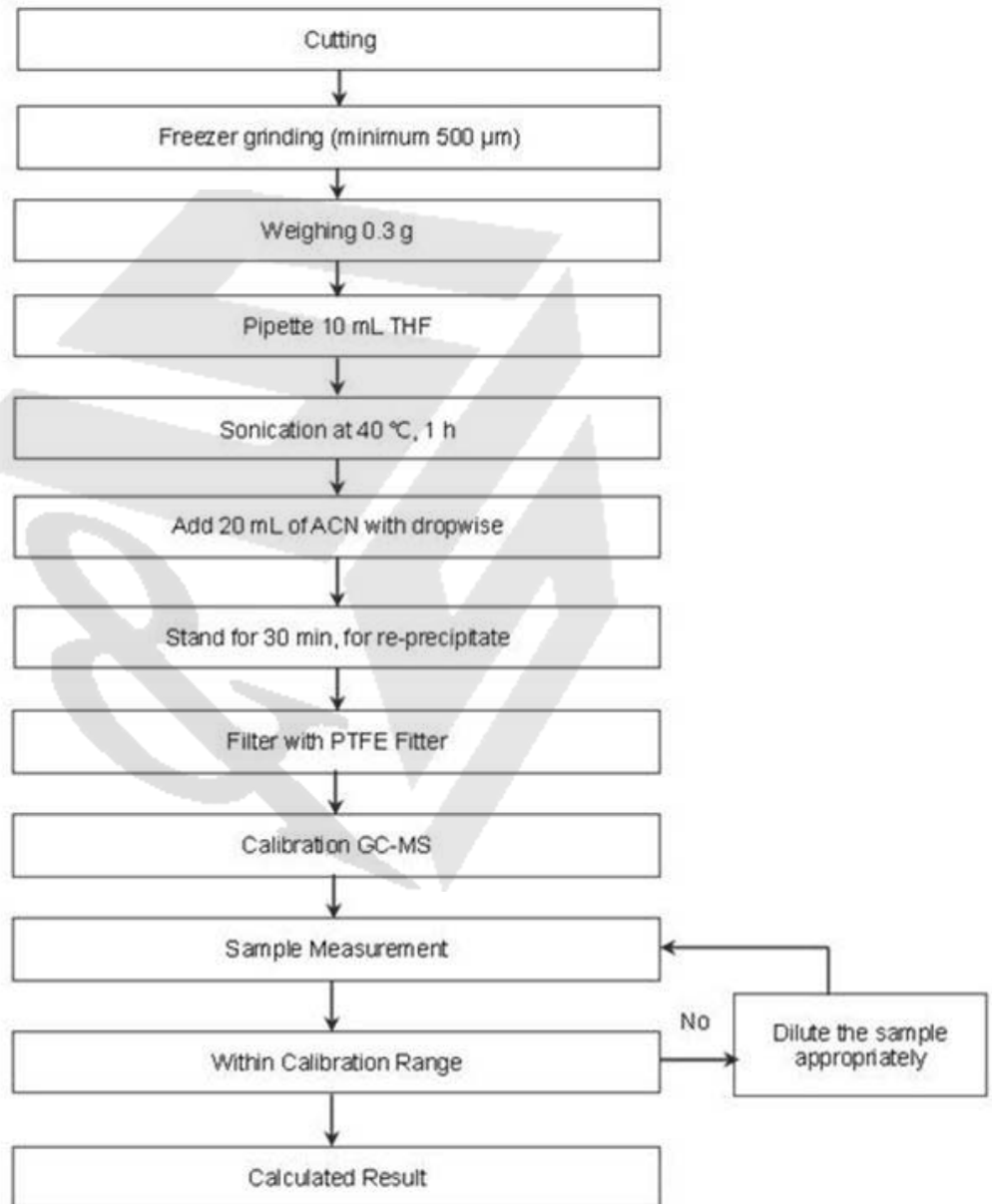




**Attachment 3 – Verification XRF Test Result**

**Flow Chart**

**Phthalates**







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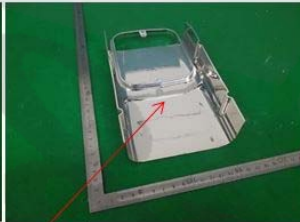
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**Attachment 3 – Verification XRF Test Result**

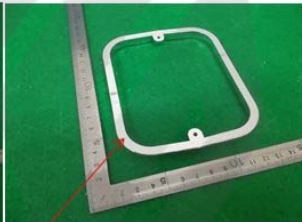
| No. | Part name    | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|--------------|----------|------------------|----|----|----|----|------------|--------|
|     |              |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 1.0 | Body CASE    |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.1 | IN CASE      |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.2 | TOP CASE     |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.3 |              |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.4 | Filter guide |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.5 |              |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.6 | Below case   |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.7 | FAN          |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |



1.0



1.1



1.2



1.3



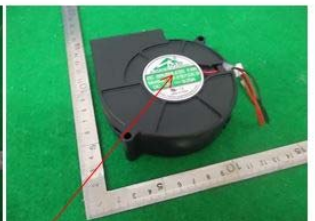
1.4



1.5



1.6



1.7

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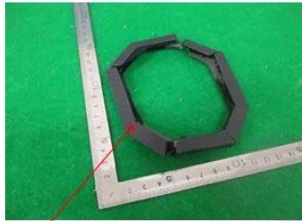


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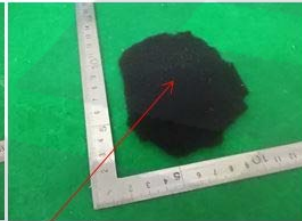
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**Attachment 3 – Verification XRF Test Result**

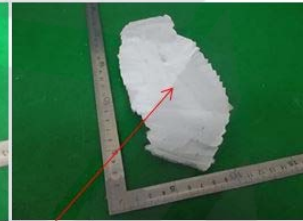
| No. | Part name  | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|------------|----------|------------------|----|----|----|----|------------|--------|
|     |            |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 1.8 | Air filter |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 1.9 |            |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.0 |            |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.1 | label      |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



1.8



1.9



2.0



2.1

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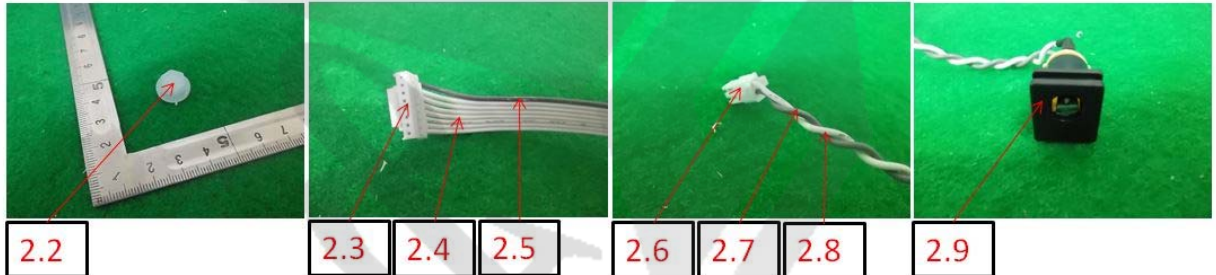


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**Attachment 3 – Verification XRF Test Result**

| No. | Part name | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|-----------|----------|------------------|----|----|----|----|------------|--------|
|     |           |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 2.2 | Rubber-1  |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.3 | Cable     |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.4 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.5 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.6 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.7 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.8 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 2.9 | DC Jack   |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



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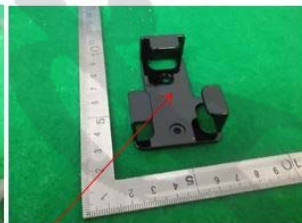


**Attachment 3 – Verification XRF Test Result**

| No. | Part name             | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|-----------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                       |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 3.0 | DC Jack               |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.1 |                       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.2 | Remote control holder |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.3 | Remote control case   |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.4 | SCREW                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.5 |                       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.6 |                       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.7 |                       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.8 |                       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 3.9 | Rubber-2              |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



3.0



3.1



3.2



3.4

3.5



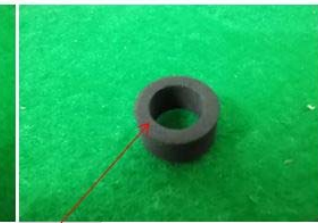
3.6



3.7



3.8



3.9



**Attachment 3 – Verification XRF Test Result**

| No. | Part name | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|-----------|----------|------------------|----|----|----|----|------------|--------|
|     |           |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 4.0 | Foot      |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.1 | Adapter   |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.2 | AC socket |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.3 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.4 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.5 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.6 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.7 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.8 | LAMP CASE |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 4.9 |           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.0 | LAMP      |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |



4.0

4.1

4.2

4.3

4.4

4.5



4.6

4.7

4.8

4.9

5.0



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| No. | Part name           | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|---------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                     |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 5.1 | Rubber-3            |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.2 | Lamp socket         |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.3 |                     |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.4 |                     |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.5 | Remote control knob |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



5.1



5.2



5.3

5.4



5.5

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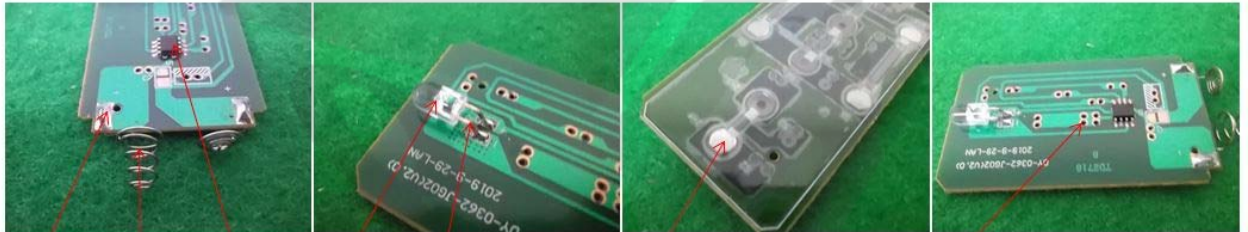


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**Attachment 3 – Verification XRF Test Result**

| No. | Part name                 | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|---------------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                           |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 5.6 | Remote control board lead |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.7 | Battery Terminal          |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 5.8 | IC                        |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 5.9 | Infrared LED              |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.0 |                           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.1 | TACT S/W-1                |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.2 | Remote control board pcb  |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



5.6 5.7 5.8

5.9 6.0

6.1

6.2

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**Attachment 3 – Verification XRF Test Result**

| No. | Part name       | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|-----------------|----------|------------------|----|----|----|----|------------|--------|
|     |                 |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 6.3 | LED board       |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 6.4 | Connector       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.5 |                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.6 | TACT SW-2       |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.7 |                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.8 |                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 6.9 | Chip LED        |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 7.0 | Chip resistance |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |



6.3

6.4 6.5

6.6 6.7 6.8

6.9 7.0

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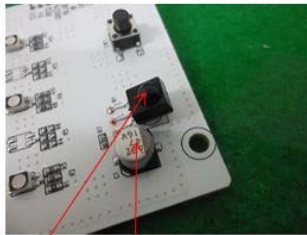


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**Attachment 3 – Verification XRF Test Result**

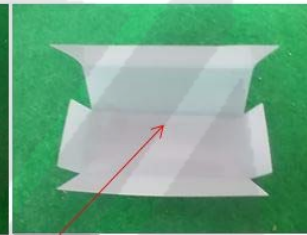
| No. | Part name        | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                  |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 7.1 | Sensor           |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 7.2 | E-CAP            |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 7.3 | Ballast Label    |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 7.4 | Ballast Case     |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 7.5 | Insulation sheet |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 7.6 | COIL             |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



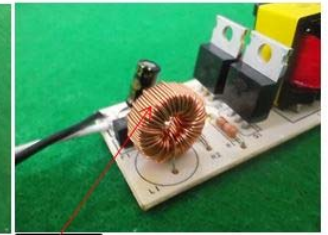
7.1 7.2



7.3 7.4



7.5



7.6

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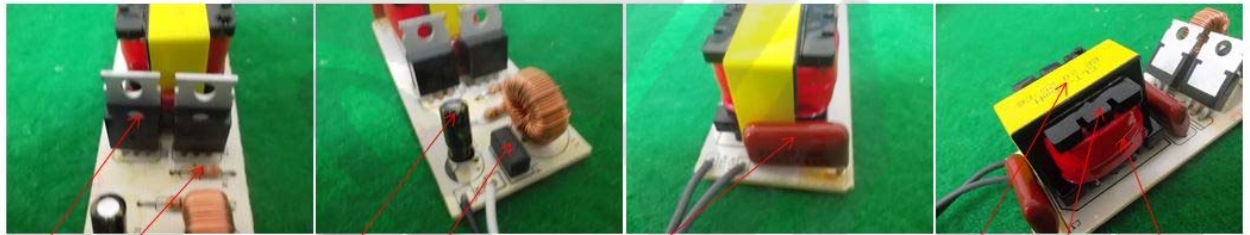


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**Attachment 3 – Verification XRF Test Result**

| No. | Part name       | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|-----------------|----------|------------------|----|----|----|----|------------|--------|
|     |                 |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 7.7 | FET             |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 7.8 | resistance      |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 7.9 | condenser       |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 8.0 | fuse            |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 8.1 | Mylar condenser |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.2 | Trans           |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.3 |                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.4 |                 |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



7.7 7.8

7.9 8.0

8.1

8.2 8.3 8.4

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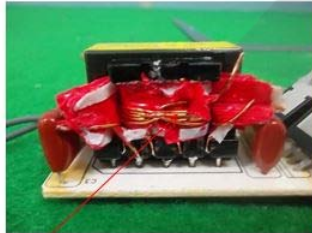


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**Attachment 3 – Verification XRF Test Result**

| No. | Part name        | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                  |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 8.5 | Trans            |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.6 | Power board lead |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.7 | Power board pcb  |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 8.8 | Control board    |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 8.9 | IC               |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 9.0 | LED              |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 9.1 |                  |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



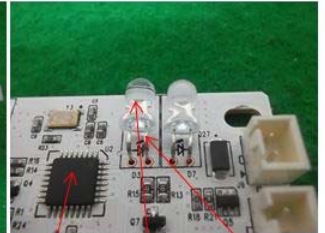
8.5



8.6



8.7



8.8

8.9

9.0

9.1

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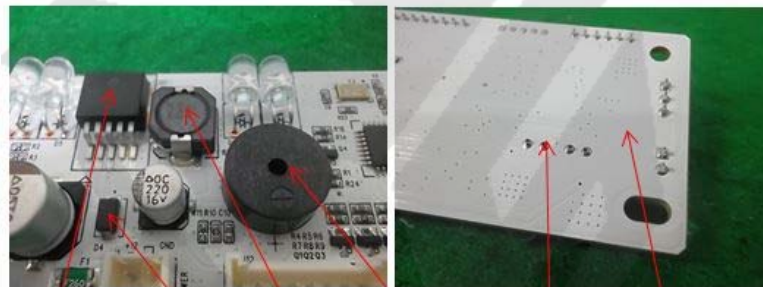


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**Attachment 3 – Verification XRF Test Result**

| No. | Part name          | Supplier | XRF Data (mg/kg) |    |    |    |    | Estimation | Result |
|-----|--------------------|----------|------------------|----|----|----|----|------------|--------|
|     |                    |          | Cb               | Pb | Hg | Br | Cr |            |        |
| 9.2 | IC-2               |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 9.3 | tantalum           |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 9.4 | COIL               |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 9.5 | Booz               |          | 0                | 0  | 0  | 0  | 0  | Type D     | P      |
| 9.6 | Control board lead |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |
| 9.7 | Control board pcb  |          | 0                | 0  | 0  | 0  | 0  | N/A        | P      |



9.2 9.3 9.4 9.5 9.6 9.7

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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.            | Material |
|------------|--------------------|---------------------|----------|
| 1          | Air Purifier       | Remote control case | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl phthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.  | Material |
|------------|--------------------|-----------|----------|
| 2          | Air Purifier       | AC socket | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.         | Material |
|------------|--------------------|------------------|----------|
| 3          | Air Purifier       | Insulation sheet | N/S      |

**Photo of the submitted sample(s)**





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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl phthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.  | Material |
|------------|--------------------|-----------|----------|
| 4          | Air Purifier       | Body CASE | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No. | Material |
|------------|--------------------|----------|----------|
| 5          | Air Purifier       | Cable    | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.   | Material |
|------------|--------------------|------------|----------|
| 6          | Air Purifier       | Air filter | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl phthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.   | Material |
|------------|--------------------|------------|----------|
| 7          | Air Purifier       | Air filter | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.            | Material |
|------------|--------------------|---------------------|----------|
| 8          | Air Purifier       | Remote control knob | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 3 – Verification XRF Test Result**

**Phthalates, Unit: mg/kg**

**(EU Directive 2011/65/EU,2015/863/EU)**

| Test Conducted                 | Test Method  | RL | Test Results |
|--------------------------------|--|----|--------------|
| butyl benzyl phthalate(BBP)    | IEC 62321-8 : 2017<br>(solvent extraction and determined by GC-MS) | 50 | N.D.         |
| di-n-butyl phthalate(DBP)      |  | 50 | N.D.         |
| di(ethylhexyl) phthalate(DEHP) |  | 50 | N.D.         |
| diisobutyl ohthalate(DIBP)     |  | 50 | N.D.         |

**Tested Sample List**

| Sample No. | Sample Description | Item No.              | Material |
|------------|--------------------|-----------------------|----------|
| 9          | Air Purifier       | Remote control holder | N/S      |

**Photo of the submitted sample(s)**



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**Attachment 4 – Remark**

1. Results are obtain by XRF in regulated substances according to EN 62321-3-1:2013.
2. It is the result in total Br while test item in restricted substances in PBBs & PBDEs.
3. Screening limits mg/kg for regulated elements in various matrices.

| Element | Polymers   | Metals   | Composite material   |
|---------|--|--|--|
| Cd      | $BL \leq (70 - 3\sigma) < X$<br>$<(130 + 3\sigma) \leq OL$     | $BL \leq (70 - 3\sigma) < X$<br>$<(130 + 3\sigma) \leq OL$     | $LOD < X <(150 + 3\sigma) < OL$                                |
| Pb      | $BL \leq (700 - 3\sigma) < X$<br>$<(1\ 300 + 3\sigma) \leq OL$ | $BL \leq (700 - 3\sigma) < X$<br>$<(1\ 300 + 3\sigma) \leq OL$ | $BL \leq (500 - 3\sigma) < X$<br>$<(1\ 500 + 3\sigma) \leq OL$ |
| Hg      | $BL \leq (700 - 3\sigma) < X$<br>$<(1\ 300 + 3\sigma) \leq OL$ | $BL \leq (700 - 3\sigma) < X$<br>$<(1\ 300 + 3\sigma) \leq OL$ | $BL \leq (500 - 3\sigma) < X$<br>$<(1\ 500 + 3\sigma) \leq OL$ |
| Br      | $BL \leq (300 - 3\sigma) < X$                                  | N/A  | $BL \leq (250 - 3\sigma) < X$                                  |
| Cr      | $BL \leq (700 - 3\sigma) < X$                                  | $BL \leq (700 - 3\sigma) < X$                                  | $BL \leq (500 - 3\sigma) < X$                                  |

\* note : BL(Below limit), OL(Over Limit), X(Inconclusive)

4. The estimation criteria of XRF screening result applied 50 % of MCV(Maximum concentration value) which is defined in 2011/65/EU RoHS Directive.

| Item                | Cd  | Pb    | Hg    | Br<br>(PBBs, PBDEs) | Cr (Cr <sup>8+</sup> ) |
|---------------------|-----|-------|-------|---------------------|------------------------|
| MCV                 | 100 | 1 000 | 1 000 | 1 000               | 1 000                  |
| Estimation criteria | 50  | 500   | 500   | 500                 | 500                    |

- The additional investigation procedure is taken when doubtful test result detected more than 50 % of MCV

5. The type of estimation

|        |  |
|--------|--|
| Type A | Detected more than 50 % of MCV of total Cr and confirmed absence of Cr <sup>8+</sup> by diphenylcarbazine reagent.                   |
| Type B | Checked XRF spectrum and confirmed interference peak   |
| Type C | Primary test result failed and replaced new ample.<br>Finally confirmed through again XRF test.                                      |
| Type D | Detected more than 50 % of MCV on total Br and confirmed absence PBBs/PBDEs through technical document of detected parts or material |
| Type E | Detected parts or material was conducted by chemical analysis  |

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**Attachment 5 – Reference document**

1. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the used of certain hazardous substances in electrical and electronic equipment.
2. EN 50581:2012  
Technical documentation for the assessment of electrical and electronics products with respect to the restriction of hazardous of hazardous substances.
3. IEC 62321-1  
Determination of certain substances in electrotechnical products – Part 1 : Introduction and overview
4. IEC 62321-3-1  
Determination of certain cunstances in electrotechnical products – Part 3-1 : Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
5. EN 62474:2012  
Material declaration for products of and for the electrotechnical industry.
6. IEC/TR 62476:2010  
Guidance for evaluation of products with respect to substance use restriction in electrical and electronic products.
7. IEC 62321-8:2017 (Solvent extraction and determined by GC-MS)