

# TEST REPORT

**Applicant:** Flashbay Electronics  
**Address:** Building2 ,Jixun Industrial Park ,Xinjiao ,Dong'ao Village ,Shatian  
Town ,Huiyang District ,Huizhou City , Guangdong Province,P.R.China

**The following sample(s) was/were submitted and identified on behalf of the client as:**

Sample name: USB Flash Drives  
Model: Slap / SL  
Manufacturer & Factory: Flashbay Electronics  
Address: Building2 ,Jixun Industrial Park ,Xinjiao ,Dong'ao Village ,Shatian  
Town ,Huiyang District ,Huizhou City , Guangdong Province,P.R.China

Sample No.: S240926016001  
Sample Received Date: 2024-09-27  
Testing Period: 2024-09-27~ 2024-10-09

**Test Requirement:**

As specified by client, to determine the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Bis-(2-ethylhexyl) Phthalate (DEHP), Benzyl butyl Phthalate (BBP), Dibutyl Phthalate (DBP) and Diisobutyl Phthalate(DIBP)contents in the submitted sample(s) in accordance with RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

**Conclusion**

Pass

**Test Result(s):** Please refer to the following page(s);

**Test Method:** Please refer to the following page(s);

Compiled by: Nina Car

Reviewed by: Luetta Mo

Approved by: May Li

Date: 2024-10-14

**Sample Description:**

| No. | Sample name     | Description   |
|-----|-----------------|---------------|
| 1   | USB Flash Drive | Black rubber  |
| 2   |                 | Silver metal  |
| 3   |                 | Black plastic |
| 4   |                 | SMD chip      |

**Test Result(s):**
**Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers(PBDEs)**

| Part No. | Test Items |        | XRF Screening Result(mg/kg) | Chemical Test Result(mg/kg) | Conclusion |
|----------|------------|--------|-----------------------------|-----------------------------|------------|
| 1        | Pb         |        | BL                          | /                           | Pass       |
|          | Cd         |        | BL                          | /                           |            |
|          | Hg         |        | BL                          | /                           |            |
|          | Cr         | Cr(VI) | BL                          | /                           |            |
|          | Br         | PBBs   | BL                          | /                           |            |
| PBDEs    |            | /      |                             |                             |            |
| 2        | Pb         |        | BL                          | /                           | Pass       |
|          | Cd         |        | BL                          | /                           |            |
|          | Hg         |        | BL                          | /                           |            |
|          | Cr         | Cr(VI) | IN                          | N.D.                        |            |
|          | Br         | PBBs   | /                           | /                           |            |
| PBDEs    |            | /      |                             |                             |            |
| 3        | Pb         |        | BL                          | /                           | Pass       |
|          | Cd         |        | BL                          | /                           |            |
|          | Hg         |        | BL                          | /                           |            |
|          | Cr         | Cr(VI) | BL                          | /                           |            |
|          | Br         | PBBs   | BL                          | /                           |            |
| PBDEs    |            | /      |                             |                             |            |
| 4        | Pb         |        | BL                          | /                           | Pass       |
|          | Cd         |        | BL                          | /                           |            |
|          | Hg         |        | BL                          | /                           |            |
|          | Cr         | Cr(VI) | BL                          | /                           |            |
|          | Br         | PBBs   | BL                          | /                           |            |
| PBDEs    |            | /      |                             |                             |            |

**Bis-(2-ethylhexyl) Phthalate (DEHP), Benzyl butyl Phthalate (BBP), Dibutyl Phthalate (DBP) and Diisobutyl Phthalate(DIBP)**

| Test Items                          | Result(mg/kg) |      |      |
|-------------------------------------|---------------|------|------|
|                                     | 1             | 3    | 4    |
| Bis-(2-ethylhexyl) Phthalate (DEHP) | N.D.          | N.D. | N.D. |
| Benzyl butyl Phthalate (BBP)        | N.D.          | N.D. | N.D. |
| Dibutyl Phthalate (DBP)             | N.D.          | N.D. | N.D. |
| Diisobutyl Phthalate(DIBP)          | N.D.          | N.D. | N.D. |
| Conclusion                          | Pass          | Pass | Pass |

- Note:
- 1.N.D. = Not Detected (<MDL)  
 MDL = Method Detection Limit  
 1 mg/kg = 1 ppm = 0.0001%  
 /=Not Regulated or Not Applicable
  2. BL = Below the XRF screening limit  
 IN = Further chemical test will be conducted when the screening result inconclusive  
 OL = Further chemical test will be conducted while the result is above the screening limit.
  3. For metal samples, the sample is negative for Cr(VI), if the Cr(VI) concentration is less than 0.10  $\mu\text{g}/\text{cm}^2$ , the coating is considered a non- Cr(VI) based coating;  
 The sample is positive for Cr(VI), if the Cr(VI) concentration is greater than 0.13  $\mu\text{g}/\text{cm}^2$ ,  
 The sample coating is considered to contain Cr(VI);  
 The result is considered to be inconclusive, the Cr(VI) concentration is between the 0.10  $\mu\text{g}/\text{cm}^2$  and 0.13  $\mu\text{g}/\text{cm}^2$ , unavoidable coating variations may influence the determination.  
 Because the storage condition and production date of the sample are not known, the test results of the sample of hexavalent chromium can only represent the state of hexavalent chromium in the samples tested.
- Remark:
1. When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.



**Test Method:**

1. With reference to IEC 62321-1: 2013 Ed.1.0, IEC 62321-2:2021 Ed.2.0, IEC 62321-3-1:2013 Ed.1.0. XRF screening limits in mg/kg for regulated elements in various matrices.

| Element | Limit of IEC 62321-3-1:2013 Ed.1.0 (mg/kg)                |   |   |
|---------|---|---|---|
|         | Polymers  | Metals  | Composite material  |
| Pb      | $BL \leq (700-3\sigma) < X$<br>$< (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X$<br>$< (1300+3\sigma) \leq OL$ | $BL \leq (500-3\sigma) < X$<br>$< (1500+3\sigma) \leq OL$ |
| Cd      | $BL \leq (70-3\sigma) < X <$<br>$(130+3\sigma) \leq OL$   | $BL \leq (70-3\sigma) < X <$<br>$(130+3\sigma) \leq OL$   | $LOD < X < (150+3\sigma)$<br>$\leq OL$                    |
| Hg      | $BL \leq (700-3\sigma) < X$<br>$< (1300+3\sigma) \leq OL$ | $BL \leq (700-3\sigma) < X$<br>$< (1300+3\sigma) \leq OL$ | $BL \leq (500-3\sigma) < X$<br>$< (1500+3\sigma) \leq OL$ |
| Cr      | $BL \leq (700-3\sigma) < X$                               | $BL \leq (700-3\sigma) < X$                               | $BL \leq (500-3\sigma) < X$                               |
| Br      | $BL \leq (300-3\sigma) < X$                               | /   | $BL \leq (250-3\sigma) < X$                               |

Note: BL= Below the XRF screening limit  
 OL=Over the XRF screening limit  
 X=The symbol "X" marks the region where further investigation is necessary.  
 $3\sigma$  =The reproducibility of analytical instruments  
 LOD= Detection limit

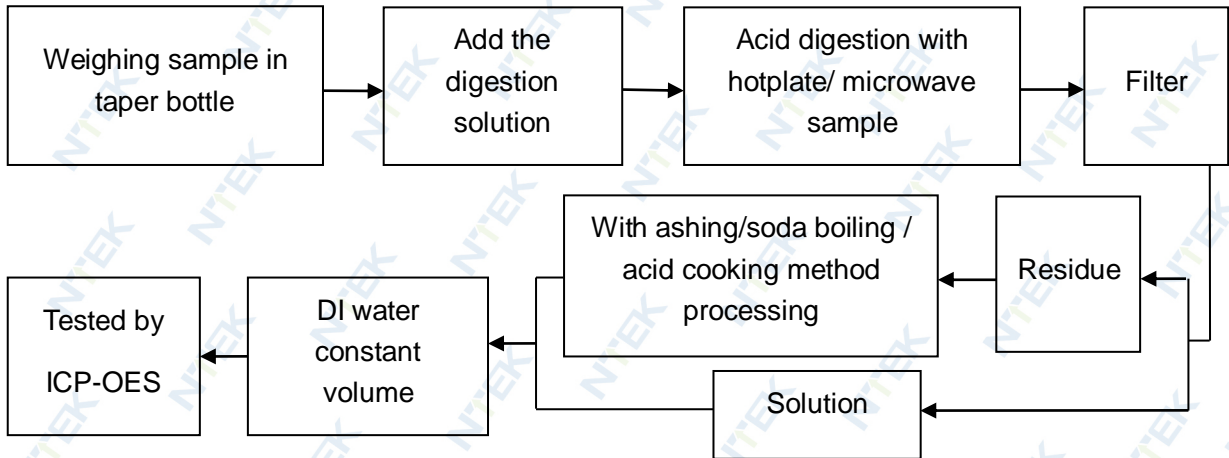
## 2. Chemical Test

| Test item                              | Test method                | Test instrument | MDL                     | Limit <sup>△</sup> |
|--|----------------------------|-----------------|-------------------------|--------------------|
| Lead (Pb)                              | IEC 62321-5:2013 Ed.1.0    | ICP-OES         | 2 mg/kg                 | 1000 mg/kg         |
| Cadmium (Cd)                           | IEC 62321-5:2013 Ed.1.0    | ICP-OES         | 2 mg/kg                 | 100 mg/kg          |
| Mercury (Hg)                           | IEC 62321-4:2013+AMD1:2017 | ICP-OES         | 2 mg/kg                 | 1000 mg/kg         |
| Hexavalent Chromium(Cr(VI))            | IEC 62321-7-1:2015 Ed.1.0  | UV-Vis          | 0.10 µg/cm <sup>2</sup> | 1000 mg/kg         |
|  | IEC 62321-7-2:2017 Ed.1.0  |                 | 8 mg/kg                 |                    |
| Polybrominated Biphenyls(PBBs)         | IEC 62321-6:2015 Ed.1.0    | GC-MS           | 5 mg/kg                 | 1000 mg/kg         |
| Polybrominated, Diphenyl Ethers(PBDEs) | IEC 62321-6:2015 Ed.1.0    | GC-MS           | 5 mg/kg                 | 1000 mg/kg         |
| Bis-(2-ethylhexyl) Phthalate (DEHP)    | IEC 62321-8:2017 Ed.1.0    | GC-MS           | 30 mg/kg                | 1000 mg/kg         |
| Benzyl butyl Phthalate (BBP)           | IEC 62321-8:2017 Ed.1.0    | GC-MS           | 30 mg/kg                | 1000 mg/kg         |
| Dibutyl Phthalate (DBP)                | IEC 62321-8:2017 Ed.1.0    | GC-MS           | 30 mg/kg                | 1000 mg/kg         |
| Diisobutyl Phthalate (DIBP)            | IEC 62321-8:2017 Ed.1.0    | GC-MS           | 30 mg/kg                | 1000 mg/kg         |

<sup>△</sup>The limit is quoted from RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

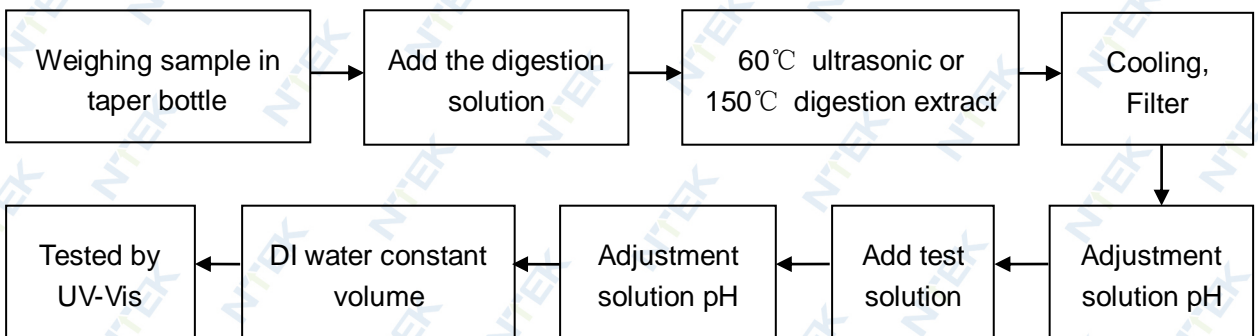
**Test Flow:**

1. Lead(Pb), Cadmium(Cd) , Mercury (Hg)

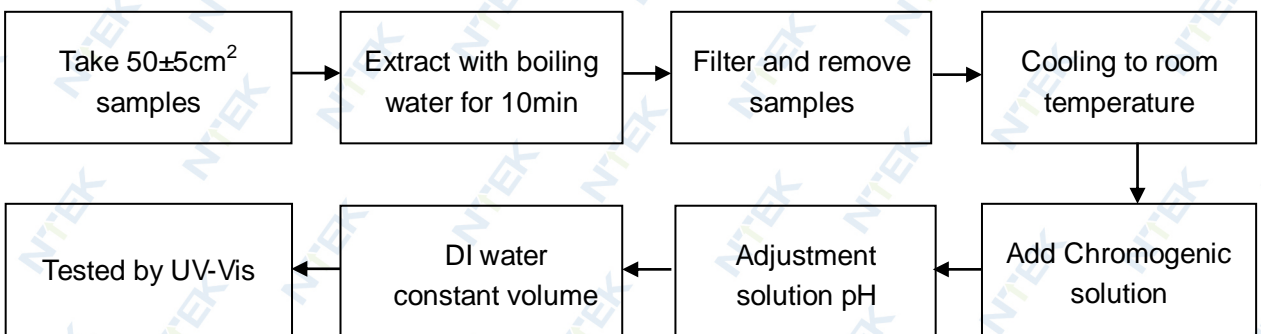


2. Hexavalent Chromium(Cr(VI))

2.1 Non- metal sample(s)

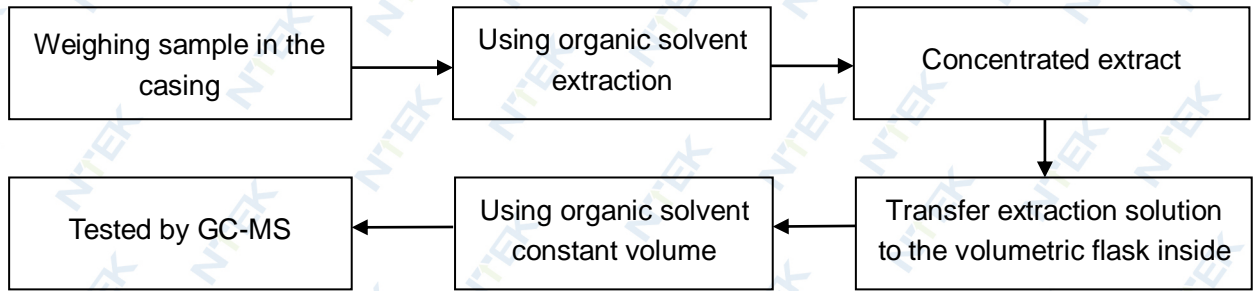


2.2 Metal sample(s)

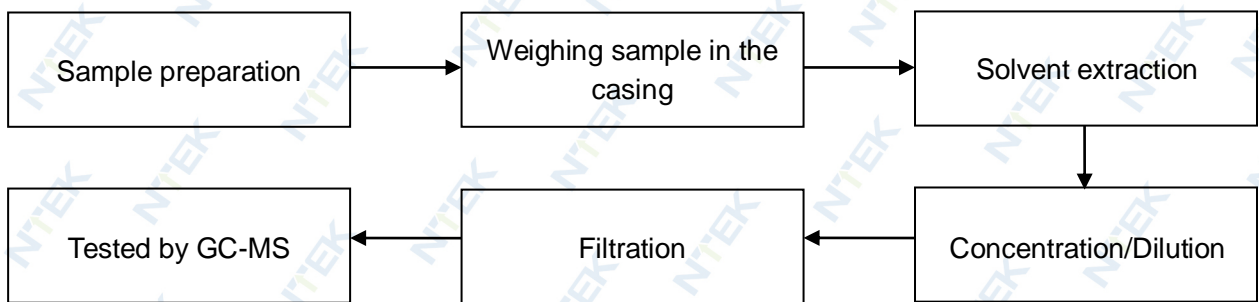




3. PBBs/ PBDEs



4. Phthalates



**Sample photo(s):**



Fig.1(Finished photo)



Fig.2(Finished photo)



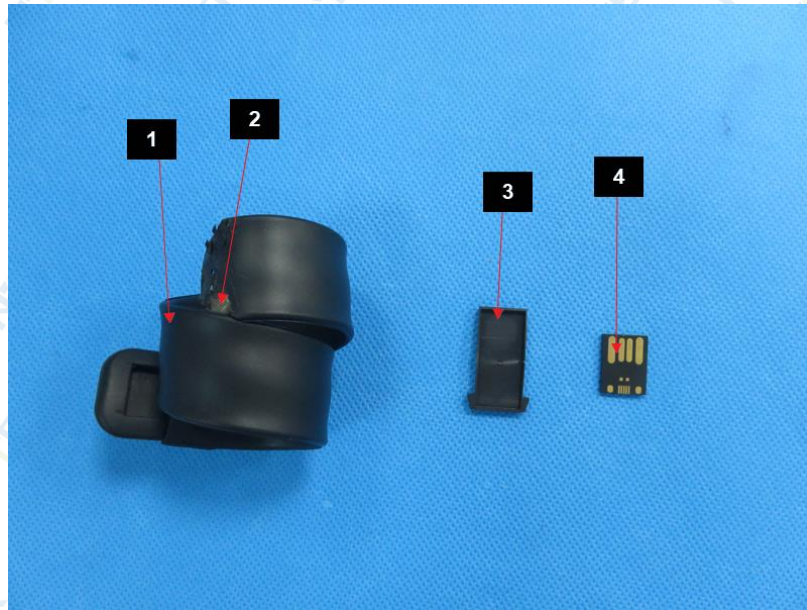


Fig.3

\*\*\*\*End of Report\*\*\*\*

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