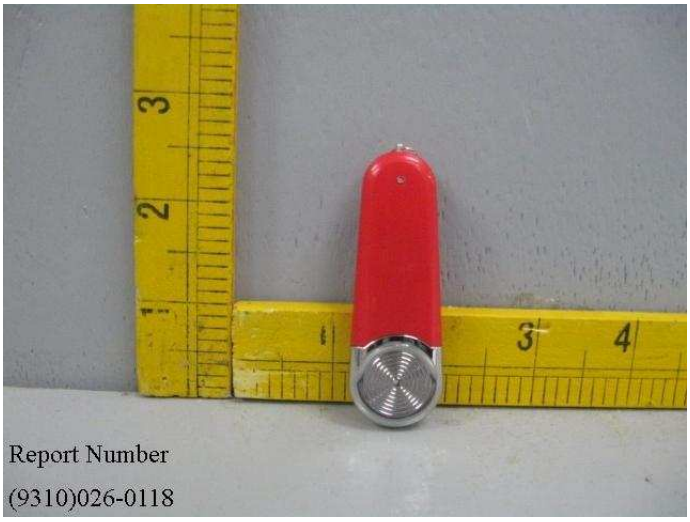
# *Certificate of RoHS Compliance Testing*

*Applicant:* **FLASHBAY ELECTRONICS (SHENZHEN) CO.,LTD**

*Contact person:* Henry Guo
*Date of report:* Feb 08, 2010
*Client Reference:* /

| | | | |
|---|---|---|---|
| *Article No.:* | / | *BVCPS reference no.* | **(9310)026-0118** |
| *Article description* | / | *Sample Description :* | Eclipse Series USB Flash Drive<br>(Type Reference: ES (config sample))<br>(Sample: 3) |




**The product fulfills the requirements of the RoHS Directive 2002/95/EC.**

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***Nowel Tai***
***Deputy Director – Business development, S. China & HK***

## *Bureau Veritas Consumer Product Services*

*Issued Date of Certificate: Feb 08, 2010*

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# TEST REPORT

| | | |
|---|---|---|
| **LAB NO.** | : | **(9310)026-0118Revised** |
| **DATE** | : | **Feb 08, 2010** |
| **REVISED DATE** | : | **Feb 09, 2010** |
| **PAGE** | : | **1 OF 7** |

| | | |
|---|---|---|
| **APPLICANT** | : | FLASHBAY ELECTRONICS (SHENZHEN) CO.,LTD<br>3-5/F, BLDG B, XIFENGCHENG INDUSTRIAL PARK,<br>NO.2 FUYUAN RD, 2ND HIGH-TECH AREA, HEPING,<br>FUYONG, BAOAN, SHENZHEN 518103, GUANGDONG<br>PROVINCE, P.R.CHINA |
| **CONTACT PERSON** | : | Henry Guo |
| **DATE OF SUBMISSION** | : | Jan 26, 2010 |
| **TEST PERIOD** | : | Jan 26, 2010 to Feb 08, 2010 |
| **NO. OF WORKING DAY(S)** | : | 10 |
| **SAMPLE DESCRIPTION** | : | Eclipse Series USB Flash Drive<br>(Type Reference: ES (config sample))<br>(Sample: 3) |

**SUMMARY OF TEST RESULTS**

| **TEST REQUESTED** | **PASS** | **FAIL** | REMARK |
|---|---|---|---|
| Restriction of Hazardous Substances Directive (RoHS), 2002/95/EC | X | | |

RW

**BUREAU VERITAS CONSUMER PRODUCTS SERVICES (GUANGZHOU) CO., LTD**

PREPARED BY : Ivy Lin

APPROVED BY:

**SANDROS FENG**
**ANALYTICAL LAB MANAGER**

**JOEIE TSANG**
**REGIONAL LABORATORY DIRECTOR**

**REMARK**

If there are questions or concerns on this report, please contact the following persons:

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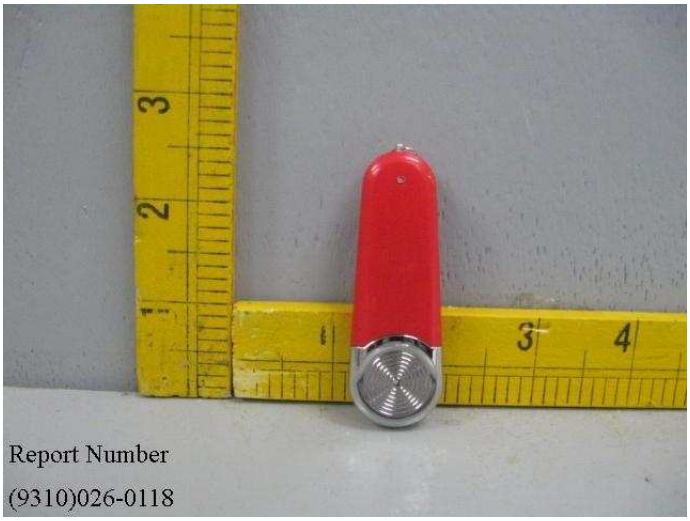
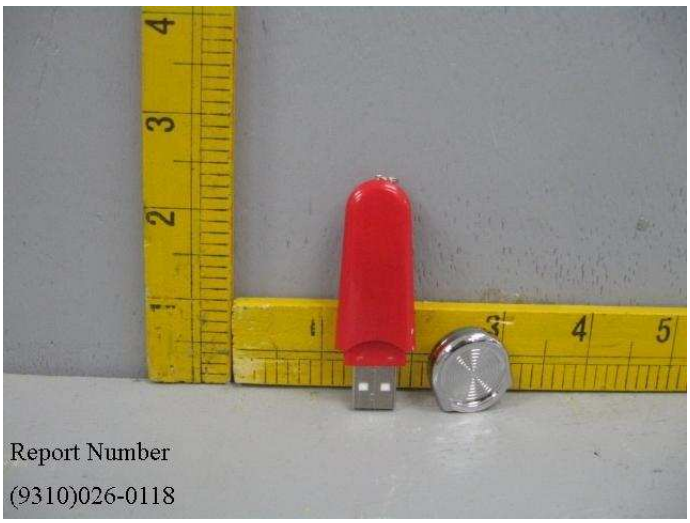
## Photo of the Submitted Sample



## TEST RESULT

### Restriction of Hazardous Substances Directive (RoHS), 2002/95/EC

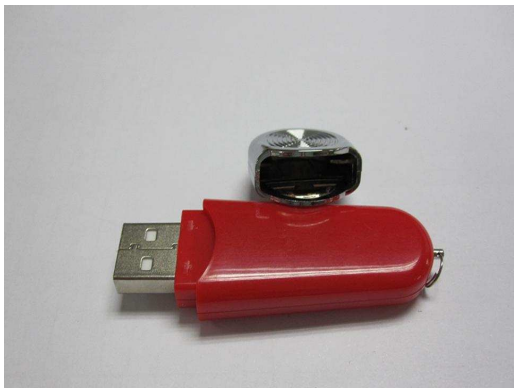
| Test Item | Description | Test Results (ppm) | | | | |
|---|---|---|---|---|---|---|
| | | Pb | Hg | Cd | Cr VI | PBBs & PBDEs |
| 1 | Silvery metal (plug) | ND | ND | ND | Negative[2)]* | NA |
| 2 | White plastic (plug) | ND | ND | ND | ND | ND* |
| 3 | Silvery plated golden metal (pin, plug) | ND | ND | ND | ND | NA |
| 4 | Black body (crystal, PCB) | ND | ND | ND | ND* | ND |
| 5 | Brown body (SMD capacitor, PCB) | ND | ND | ND | ND | ND |
| 6 | Grey body (big SMD capacitor, PCB) | ND | ND | ND | ND | ND* |
| 7 | Grey body (small SMD capacitor, PCB) | ND | ND | ND | ND | ND |
| 8 | Dark grey body (big EC, PCB) | ND | ND | ND | ND | ND |
| 9 | Black/ white body (EC, PCB) | 1180[#]* | ND | ND | ND | ND* |
| 10 | Silvery solder (PCB) | ND | ND | ND | ND | NA |
| 11 | Black body (big IC, PCB) | ND | <500 | ND | ND | ND* |
| 12 | Silvery plated coppery metal (pin, big IC, PCB) | ND | ND | ND | ND | NA |
| 13 | Black/ white body (SMD resistor, PCB) | <500 | ND | ND | ND* | ND |
| 14 | Black body (small IC, PCB) | ND | ND | ND | ND | ND |
| 15 | Silvery plated coppery metal (pin, small IC, PCB) | ND | ND | ND | ND | NA |
| 16 | White printed green coated brown plastic with coppery metal (PCB) | ND | ND | ND | ND | ND* |
| 17 | Red plastic (case) | ND | ND | ND | ND | ND |
| 18 | Silvery plated red plastic (case) | ND | ND | ND | ND | ND |
| 19 | Silvery plated golden metal (ring holder, case) | <500 | ND | ND | ND | NA |
| 20 | Silvery metal (ring, case) | <500 | ND | ND | ND | NA |
| 21 | Silvery metal (LED pin) | ND | ND | ND | ND | NA |
| 22 | Transparent/ silvery body (LED) | ND | ND | ND | ND | ND* |

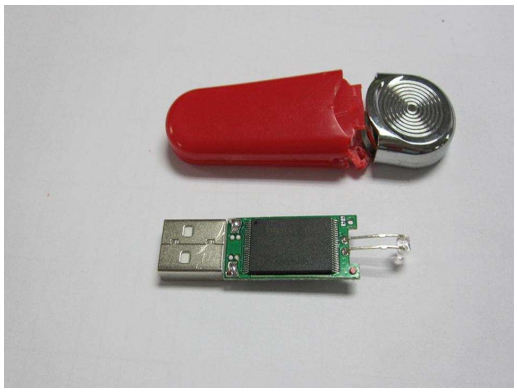
For item 9:
[#]According to the directive 2005/717/EC, 2005/747/EC and 2006/310/EC, the annex of 2002/95/EC was amended and Clause 7 is reiterated here "Lead in electronic ceramic parts (e.g. piezoelectronic devices)." The sample as received was provided by the client to be electronic ceramic parts, therefore, this material containing the found heavy metals level should be exempted.

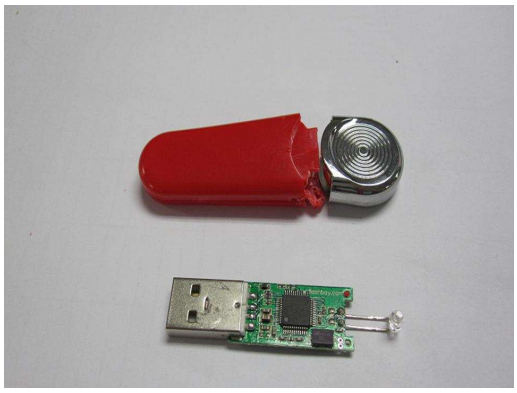
## TEST RESULT

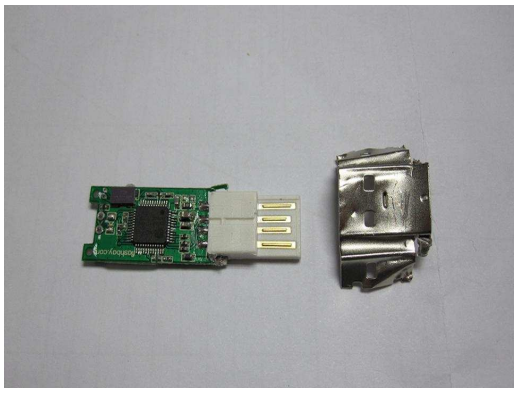
## Restriction of Hazardous Substances Directive (RoHS), 2002/95/EC

### Photograph(s) of tested components









**Note:**
Detection limits of XRF and wet chemistry methods for regulated substances in various matrices and limit of RoHS (in ppm)

| **Regulated Substances** | **Detection Limit (ppm)** | | | | **RoHS' Limit (ppm)** |
|---|---|---|---|---|---|
| | **XRF** | | | **Wet Chemistry** | |
| | **Plastics** | **Metals** | **Electronics** | | |
| Pb | 100 | 200 | 200 | 10 | 1000 |
| Hg | 100 | 200 | 200 | 10 | 1000 |
| Cd | 50 | 50 | 50 | 10 | 100 |
| Cr | 100 | 200 | 200 | NA | NA |
| Cr VI | NA | NA | NA | 10 | 1000 |
| Br | 200 | NA | 200 | NA | NA |
| PBBs<br>*Bromobiphenyls*<br>*Dibromobiphenyls*<br>*Tribromobiphenyls*<br>*Tetrabromobiphenyls*<br>*Pentabromobiphenyls*<br>*Hexabromobiphenyls*<br>*Heptabromobiphenyls*<br>*Octabromobiphenyls*<br>*Nonabromobiphenyls*<br>*Decabromobiphenyl* | NA | NA | NA | 50 (each) | 1000 (sum) |
| PBDEs<br>*Bromodiphenyl ethers*<br>*Dibromodiphenyl ethers*<br>*Tribromodiphenyl ethers*<br>*Tetrabromodiphenyl ethers*<br>*Pentabromodiphenyl ethers*<br>*Hexabromodiphenyl ethers*<br>*Heptabromodiphenyl ethers*<br>*Octabromodiphenyl ethers*<br>*Nonabromodiphenyl ethers*<br>*Decabromodiphenyl ether* | NA | NA | NA | 50 (each) | 1000 (sum) |

ppm = mg/kg < = less than ND = not detected NA = not applicable
L = low risk materials, no conflict with RoHS directive accordance to the UK Department of Trade and Industry RoHS compliance procedure
Pb = Lead Hg = Mercury Cd = Cadmium Cr = Chromium
Br = Bromine PBBs = Polybrominated Biphenyls PBDEs = Polybrominated Diphenyl Ethers

**Test Method:**

1. XRF Screening - IEC 62321:2008, "Electrotechnical Products- Determination of Levels of Six Regulated Substances" (Chapter 6) or;

2. Wet Chemistry Tests – Reference to to IEC 62321:2008, "Electrotechnical Products- Determination of Levels of Six Regulated Substances":

   i. Lead (Pb) and Cadmium (Cd): The sample is comminuted and digested with acid mixtures. Pb/ Cd contents are determined with ICP-AES technique. (Chapter 8, 9 & 10)

   ii. Mercury (Hg): The sample is comminuted and digested with acid mixtures. Hg content is determined with ICP-AES, ICP-MS or AAS-VGA technique. (Chapter 7)

   iii. Chromium (VI) (Cr VI):
      A. Metal: Qualitative method for the presence of hexavalent chromium on metal surface on "Test for the presence of Hexavalent Chromium (Cr (VI)) in colourless and coloured corrosion-protection coatings on metals". The presence of hexavalent chromium is indicated by the formation of a red to violet color. The method is applied in turn to 1) untreated surface; 2) surface got by gently rubbing to scratch possibly reduced chromate surface but without completely removing the whole coating layer; 3) surface got by forcibly scratching into the deeper layers, even reaching the substrate. The sample is further verified by boiling water extraction method if the result of spot test shows ahead is negative or uncertain. (Annex B)

      B. Plastics & Electronics : The sample is comminuted and digested with alkaline mixtures. Chromium VI content is determined with UV-VIS spectroscopic technique. (Annex C)

   iv. PBBs and PBDEs: The sample extracted by appropriate solvent is used for extraction and quantified GC-MS. (Annex A)

3. The testing approach reference to:
   i. "RoHS Enforcement Guidance Document version 1" by EU RoHS Enforcement Authorities Informal Network (May 2006),

   ii. "RoHS Regulations – Government Guidance Notes" by Department of Trade and Industry, UK (Jan 2007), and

   iii. "RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium" by Belgium Federal Public Service, Health, Food Chain Safety and Environment, Belgium (Nov 2005)

**Remark:**

1. Test results marked with * are determined by wet chemistry. Others are screened by XRF.
2. Positive means the presence of hexavalent chromium on the tested areas. It is regarded as in conflict with RoHS requirements. According to the IEC 62321, the principle of this method was evaluated and supported by two studies organized by IEC TC111 WG3. The studies were focused on detecting the presence of Cr(VI) in metallic samples.
3. For XRF screening, the reported Chromium VI result is determined as total chromium, and Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) results are determined as total bromine.
4. Only selected example(s) is/ are indicated on the above photograph.
5. The above results of item 1-16 are transferred from (9310)-026-0115 dated on Feb 08, 2010.

END