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:	Carve/CVE
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.:	S241022030008
Sample Received Date:	2024-10-24
Testing Period:	2024-10-24~ 2024-11-08

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.Cai Reviewed by: Luetta Mo

Approved by: Mary Li Date: 2024-11-11

Sample Description:

No.	Sample name	Description
1	USB Flash Drives	Yellow wood of shell
2		Silver metal clasp of shell
3		Silver metal ring of shell
4		Silver metal shell of USB interface
5		Transparent plastic shell of USB interface
6		Black PCB of USB interface

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		OL	20450[#1]	Pass
	Cd		IN	21	
	Hg		BL	/	
	Cr	Cr(VI)	BL	/	
	Br	PBBs	/	/	
		PBDEs		/	
3	Pb		BL	/	Pass
	Cd		BL	/	
	Hg		BL	/	
	Cr	Cr(VI)	BL	/	
	Br	PBBs	/	/	
		PBDEs		/	
4	Pb		BL	/	Pass
	Cd		BL	/	
	Hg		BL	/	
	Cr	Cr(VI)	BL	/	
	Br	PBBs	/	/	
		PBDEs		/	

5	Pb		BL	/	Pass
	Cd		BL	/	
	Hg		BL	/	
	Cr	Cr(VI)	BL	/	
	Br	PBBs	BL	/	
		PBDEs		/	
6	Pb		BL	/	Pass
	Cd		BL	/	
	Hg		BL	/	
	Cr	Cr(VI)	BL	/	
	Br	PBBs	/	/	
		PBDEs		/	

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

Test Items	Result(mg/kg)	
	5	6
Bis-(2-ethylhexyl) Phthalate (DEHP)	N.D.	N.D.
Benzyl butyl Phthalate (BBP)	N.D.	N.D.
Dibutyl Phthalate (DBP)	N.D.	N.D.
Diisobutyl Phthalate(DIBP)	N.D.	N.D.
Conclusion	Pass	Pass

Note: 1.N.D. = Not Detected (<MDL)
MDL = Method Detection Limit
1mg/kg = 1ppm =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 μg/cm², 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 μg/cm², 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 μg/cm² and 0.13 μg/cm², 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.
2. According to the client's statement , the material of the sample(s) comply with RoHS directive 2011/65/EU Annex III Exemption, Corresponding exemption clause:
#1 6(c) Lead is exempted as copper alloy containing up to 4% lead by weight .

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≤(700-3σ) <X <(1300+3σ)≤OL	BL≤(700-3σ) <X <(1300+3σ)≤OL	BL≤(500-3σ)<X <(1500+3σ)≤OL
Cd	BL≤(70-3σ)<X < (130+3σ) ≤OL	BL≤(70-3σ)<X < (130+3σ) ≤OL	LOD <X<(150+3σ) ≤OL
Hg	BL≤(700-3σ)<X <(1300+3σ)≤OL	BL≤(700-3σ)<X <(1300+3σ)≤OL	BL≤(500-3σ)<X <(1500+3σ)≤OL
Cr	BL≤(700-3σ)< X	BL≤(700-3σ)< X	BL≤(500-3σ)< X
Br	BL≤(300-3σ)< X	/	BL≤(250-3σ)< X

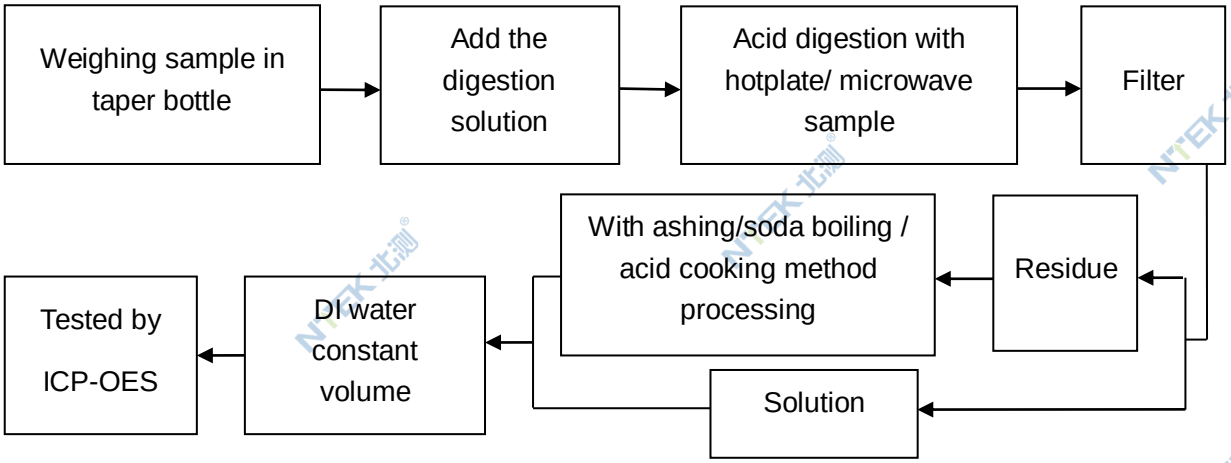
Note: BL= Below the XRF screening limit
OL=Over the XRF screening limit
X=The symbol"X"marks the region where further investigation is necessary.
3σ =The reproducibility of analytical instruments
LOD= Detection limit

2. Chemical Test

Test item	Test method	Test instrument	MDL	Limit△
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^2	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
△The limit is quoted from RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.				

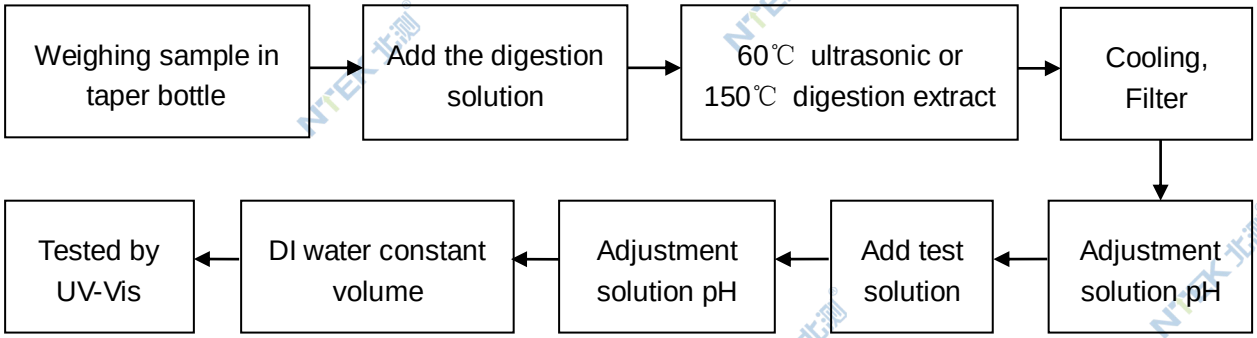
Test Flow:

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

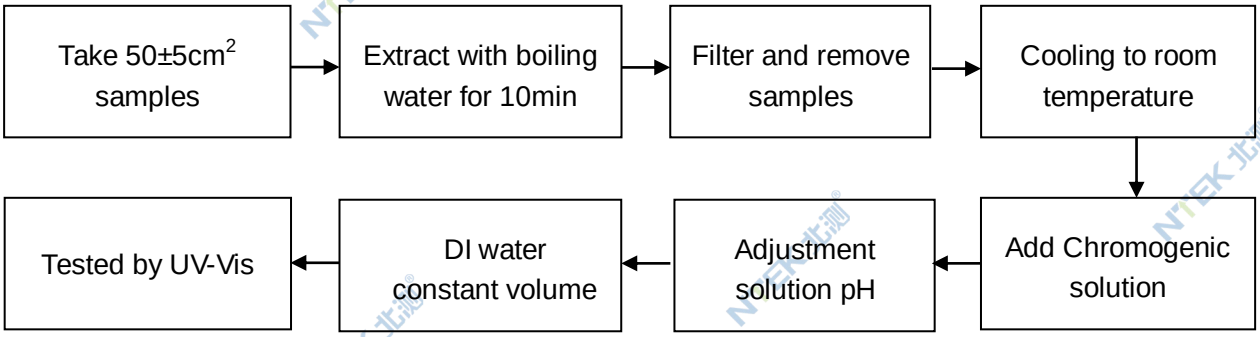


2. Hexavalent Chromium(Cr(VI))

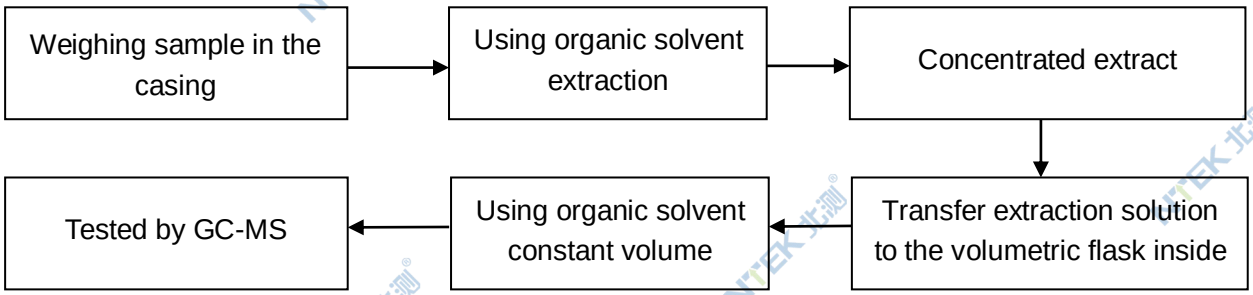
2.1 Non- metal sample(s)



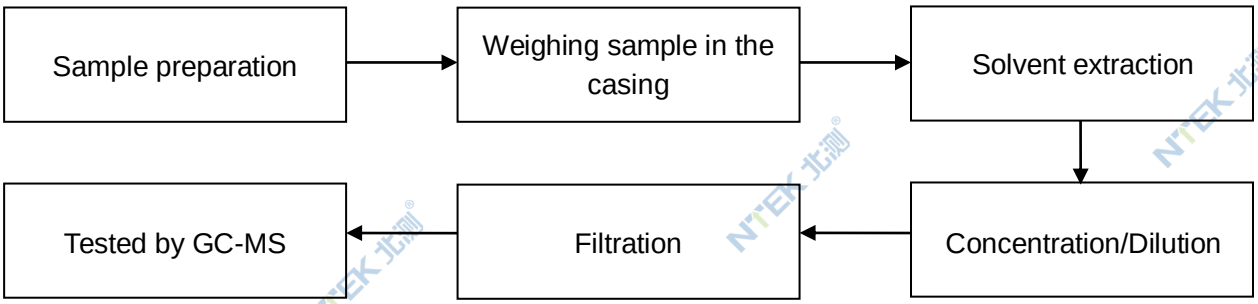
2.2 Metal sample(s)



3. PBBs/ PBDEs



4. Phthalates



Sample photo(s):

Fig.1 Finished photo

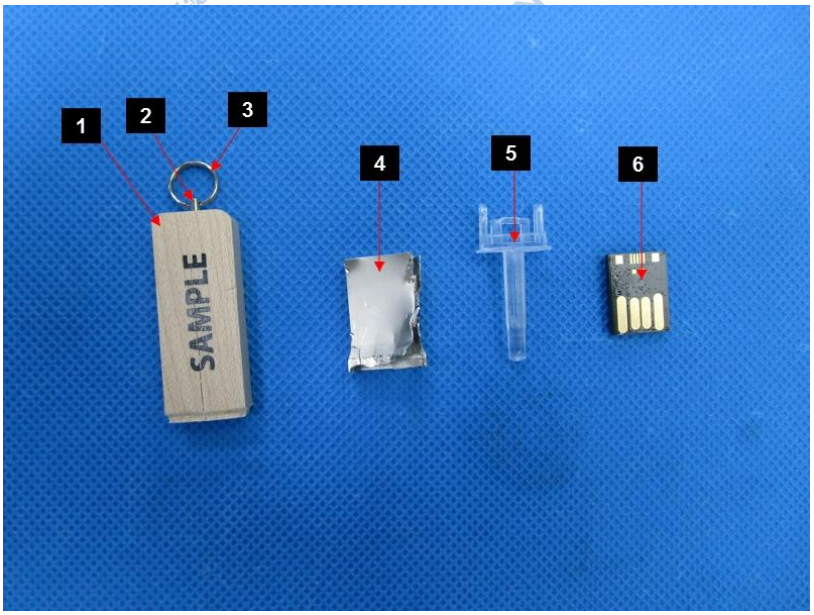


Fig.2

****End of Report****

The test results or data in this report will be used only for education, scientific research, enterprise product development and internal quality control or other purposes.

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