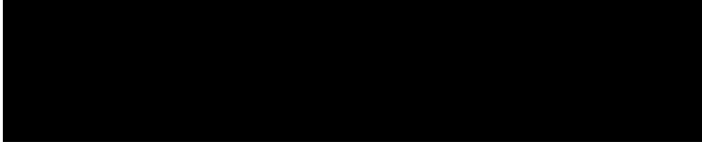


Test Report

Number: SHAH01097340

Applicant:



Date: 24 May, 2019

Sample Description:

One (1) group of submitted sample said to be :

Item Name : USB ballpen

Item No. : PS21,PS22,PS41,PS70

Tests Conducted:

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

Conclusion:

<u>Tested Samples</u>	<u>Standard</u>	<u>Result</u>
Screened components of submitted sample	Screening by XRF spectroscopy and chemical confirmation test for RoHS Directive 2011/65(EU) and 2015/863 (EU)	Pass

To Be Continued

Authorized By:

Intertek Testing Services Ltd, Shanghai, HangZhou Branch

Young Zhu
Vice President



Test Report

Number: SHAH01097340

Tests Conducted
Tests Conducted

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0: 2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances. And Phthalates content were determined by Gas Chromatographic-Mass Spectrometric (GC-MS).

(A) Results:

Part No.	Tested Components	Refer information	Restricted Substance	XRF Result	Screened Results (BLphthalates)	Chemical Confirmation Result	Conclusion on RoHS
1	SHELL (BLACK PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	
			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	
2	CAP (SILVER METAL)	/	Cd	P	NA	/	PASS (#6)
			Pb	X		24610ppm	
			Hg	P		/	
			Cr	X		Negative	
			Br	NA		/	
			DEHP	NA	NA	/	
			BBP	NA	NA	/	
			DBP	NA	NA	/	
			DIBP	NA	NA	/	
3	TUBE (TRANSLUCENT PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	
			BBP	NA	BL	/	
			DBP	NA	BL	/	



Test Report

Number: SHAH01097340

Tests Conducted

			DIBP	NA	BL	/	
4	SUPPORT (WHITE PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	
			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	
5	SPRING (SILVER METAL)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	NA		/	
			DEHP	NA	NA	/	
			BBP	NA	NA	/	
			DBP	NA	NA	/	
			DIBP	NA	NA	/	
6	SUPPORT (BLACK PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	
			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	
7	CAP (BLACK PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	

Test Report

Number: SHAH01097340

Tests Conducted

			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	
8	HOOK (BLACK METAL)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	NA		/	
			DEHP	NA	NA	/	
			BBP	NA	NA	/	
			DBP	NA	NA	/	
			DIBP	NA	NA	/	
9	CARTRIDGE						
9-1	TUBE (SILVER METAL)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	NA		/	
			DEHP	NA	NA	/	
			BBP	NA	NA	/	
			DBP	NA	NA	/	
			DIBP	NA	NA	/	
9-2	HEAD (SILVER METAL)	/	Cd	P	NA	/	PASS (#6)
			Pb	X		19550ppm	
			Hg	P		/	
			Cr	P		/	
			Br	NA		/	
			DEHP	NA	NA	/	
			BBP	NA	NA	/	
			DBP	NA	NA	/	
			DIBP	NA	NA	/	
9-3	EMBEDDED OBJECT (BLACK PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	



Test Report

Number: SHAH01097340

Tests Conducted

			Cr	P		/	
			Br	P		/	
			DEHP	NA	X	214ppm	
			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	
9-4	BLOCK (BLACK PLASTIC)	/	Cd	P	NA	/	PASS
			Pb	P		/	
			Hg	P		/	
			Cr	P		/	
			Br	P		/	
			DEHP	NA	BL	/	
			BBP	NA	BL	/	
			DBP	NA	BL	/	
			DIBP	NA	BL	/	

Remark:

P = Pass (Below the lower screening limit of table (B))

X = Inconclusive result (Further chemical test was suggested (see table (B)).)

NA = Not applicable

Negative = The Cr (VI) concentration is less than 0.10 µg/cm². The sample is negative for Cr (VI).

(#6) = As claimed by the declaration submitted from the applicant / supplier of applicant, the Lead content of the component comes from Copper alloy only. According to EU RoHS Directive (2011/65/EU), Lead in Copper alloy containing up to 4% (40,000 mg/kg) Lead by weight can be exempted.

(B)

(B1) XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices.

Element	Polymer materials	Metallic materials	Composite materials
Cd	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 150 \leq F$
Pb	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Hg	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Cr	$P \leq 700 < X$	$P \leq 700 < X$	$P \leq 500 < X$
Br	$P \leq 300 < X$	Not applicable	$P \leq 250 < X$

(B2) Preliminary screening test will be used for phthalates, if the results exceed the warning area in the following table, further chemical methods will be conducted to confirm the exact content by GC/MS.

Phthalates	Polymer
Bis(2-ethylhexyl)phthalate(DEHP)	$BL \leq 600 < X$
Butyl benzyl phthalate(BBP)	$BL \leq 600 < X$



Test Report

Number: SHAH01097340

Tests Conducted

Dibutyl phthalate(DBP)	BL ≤600<X
Diisobutyl phthalate(DIBP)	BL ≤600<X

C) Estimated detection limits in mg/kg for regulated elements in various matrices.

Element	Polymer materials	Metallic materials	Composite materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200

Disclaimers:

This XRF Screening and Chemical Confirmation Test Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening and Chemical Confirmation Test Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis is required to obtain quantitative data.

(D) Chemical confirmation test methods:

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd) Content	With reference to IEC 62321-5 Edition 1.0 : 2013, by acid digestion and determined by ICP - OES	2 mg/kg
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0 : 2013, by acid digestion and determined by ICP - OES	2 mg/kg
Mercury (Hg) Content	With reference to IEC 62321-4 Edition 1.0 : 2013+A1, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI) (Cr ⁶⁺) content (for non-metal)	With reference to IEC 62321-7-2 Edition 1.0: 2017, by organic solvent dissolution or swell the sample matrix, followed by alkaline digestion and determined by UV-VIS Spectrophotometer.	10mg/kg
Chromium (VI) (Cr ⁶⁺) content (for metal)	With reference to IEC 62321-7-1 Edition 1.0: 2015, by boiling water extraction and determined by UV-VIS Spectrophotometer.	Positive(>0.13 mg/m ²)/ Negative(≤0.10 mg/m ²) Inconclusive(0.10--0.13 mg/m ²)
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs) Content	With reference to IEC 62321-6 edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg



Test Report

Number: SHAH01097340

Tests Conducted

Testing Item	Testing Method	Reporting Limit
Phthalates(DEHP,BBP,DBP,DIBP) Content	With reference to IEC62321-8 : 2017, by solvent extraction and determined by GC/MS	100mg/kg

(E) RoHS requirement

Restricted substances	Limits
Cadmium (Cd)	0.01% (100 ppm)
Lead (Pb)	0.1% (1000 ppm)
Mercury (Hg)	0.1% (1000 ppm)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 ppm)
Polybrominated biphenyls (PBBs)	0.1% (1000 ppm)
Polybrominated diphenyl ethers (PBDEs)	0.1% (1000 ppm)
Phthalates(DEHP, BBP, DBP, DIBP)	0.1% (1000 ppm)

The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.



Test Report

Number: SHAH01097340

Tests Conducted



Sample Received Date: May 17, 2019.

Testing Period: May 17, 2019. To May 24, 2019

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.

This report shall not be reproduced except in full, without written approval of the laboratory.

