

Report No.: 18300RC30164301

# Test Report

**Client Name : Sharkoon Technologies GmbH**

---

**Client Address : Grüninger Weg 48, 35415 Pohlheim, Germany**

---

**Product Name : OfficePal USB-C Adapters**

---

**Report Date : May 16, 2023**

---



**Shenzhen Anbotek Compliance Laboratory Limited**

**Shenzhen Anbotek Compliance Laboratory Limited**

Address: East of 4/F., Building A, Hourui No.3 Industrial Zone, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China  
Tel: (86) 0755-26066126 Fax: (86) 0755-26066021 Email: service@anbotek.com

 Hotline  
400-003-0500  
www.anbotek.com.cn



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 1 of 16

**Applicant** : Sharkoon Technologies GmbH  
**Address** : Grüninger Weg 48, 35415 Pohlheim, Germany

**The submitted sample and sample information was/were submitted and identified by/on the behalf of the client**

**Sample Name** : OfficePal USB-C Adapters  
**Test Model No.** : OfficePal USB-C Adapters  
**Sample Received Date** : Apr. 13, 2023  
**Testing Period** : Apr. 14, 2023 to Apr. 24, 2023

**Test Requested** : As specified by client, to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the selected material of the submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019.

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

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

Edited by Wei Jia Xin Reviewed by Juher Authorized Signatory Carlson



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 2 of 16

## Test Method:

### A. XRF Screening Test

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013 Unit (mg/kg)		
	Polymers	Metals	Composite material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
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:

-N.A. = Not Applicable

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

### B. Chemical Test

Test Item(s)	Test Method	Measured Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013		2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017		2 mg/kg	1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-1:2015	UV-VIS	0.10μg/cm <sup>2</sup>	---
	IEC 62321-7-2:2017		8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015		5 mg/kg	1000 mg/kg
Phthalates (DIBP, DBP, BBP, DEHP)	IEC 62321-8:2017		50 mg/kg	1000 mg/kg



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 3 of 16

**Test Results:**

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
1	Metal shell with black coating	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
2	Metal shell with black coating	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
3	Silvery metal interface	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	X	Negative	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
DIBP	N.A.	/			



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 4 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
4	Silvery metal sheet	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	X	Negative	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
5	Silvery metal pin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
6	Black inner plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
DIBP	N.A.	N.D.			



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 5 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
7	Silvery metal interface	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
8	Blue inner plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
9	Silvery metal soldering tin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
		DIBP	N.A.	/	



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 6 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
10	Green PCB board	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	X	N.D.	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
11	Black plastic block	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
12	Black rubber ring	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
DIBP	N.A.	N.D.			



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 7 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
13	Black plastic block	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
14	Silvery metal interface	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
15	Copper-colored metal pin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
		DIBP	N.A.	/	





# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 8 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
16	Blue inner plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
17	Chip resistor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
18	Silvery metal interface	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
		DIBP	N.A.	/	



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 9 of 16

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
19	Silvery metal pin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
20	Black inner plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	N.A.	N.D.	
		BBP	N.A.	N.D.	
		DEHP	N.A.	N.D.	
21	Copper-colored metal pin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	N.A.	/	
		DBP	N.A.	/	
		BBP	N.A.	/	
		DEHP	N.A.	/	
DIBP	N.A.	/			



# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 10 of 16

**Note:**

- The screening results are only used for reference.
  - 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.
  - BL = Under the XRF screening limit
  - OL = Further chemical test will be conducted while result is above the screening limit
  - X= The symbol "X" marks the region where further investigation is necessary
  - LOD= Detection limit
  - MDL = Method Detection Limit
  - N.A. = Not Applicable
  - N.D. = Not Detected (<MDL)
  - /=Not tested
  - 1mg/kg = 1ppm = 0.0001%
  - $\mu\text{g}/\text{cm}^2$  = microgramme per square centimetre
  - "----"=
- a. -Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than  $0.10\mu\text{g}/\text{cm}^2$ .
- b. -Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than  $0.13\mu\text{g}/\text{cm}^2$ .
- c. The result is between  $0.10\mu\text{g}/\text{cm}^2$  with  $0.13\mu\text{g}/\text{cm}^2$  is considered to be inconclusive-unavoidable coating variations may influence the determination.



# Test Report

Report No.: 18300RC30164301

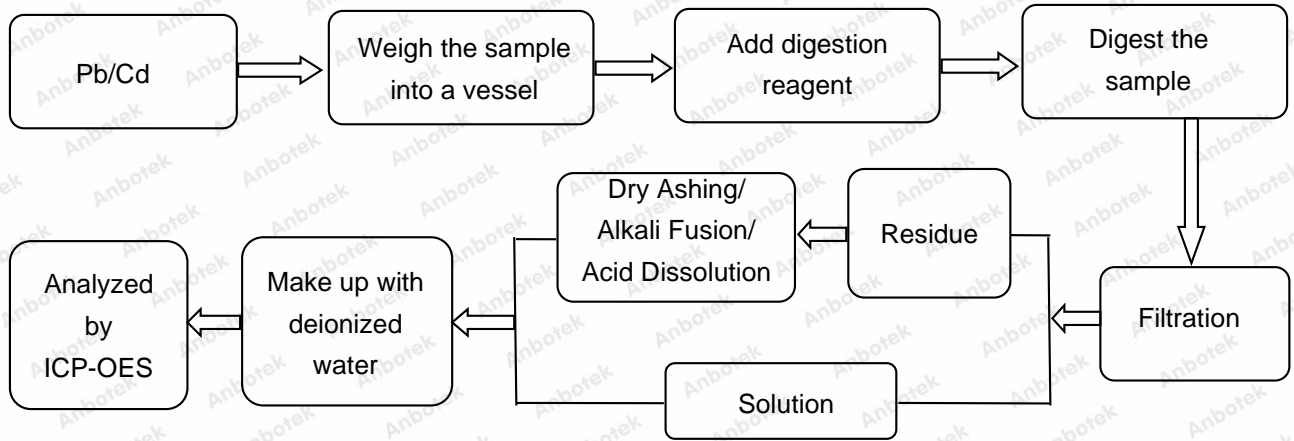
Date: May 16, 2023

Page 11 of 16

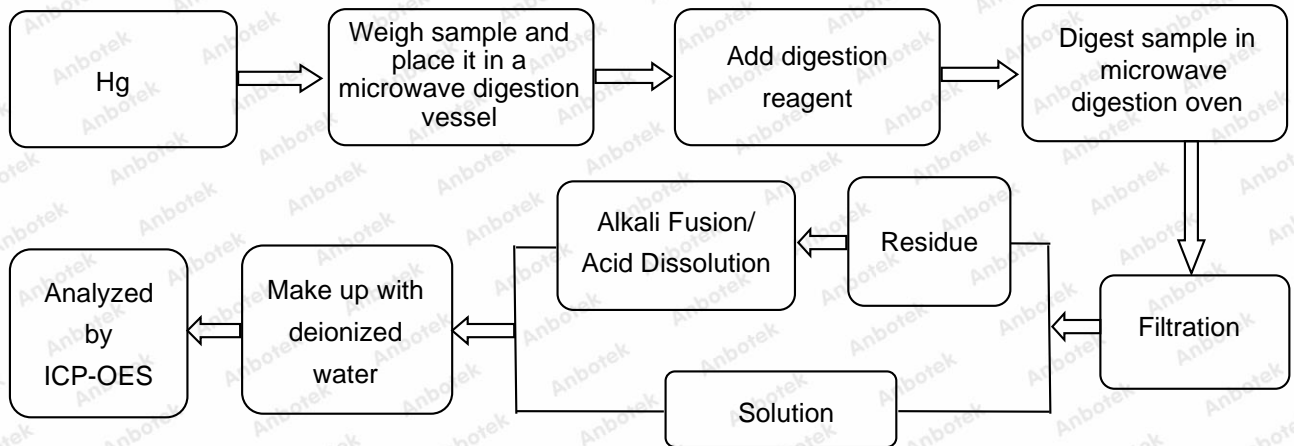
**Test Process:**

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

◆ IEC 62321-5:2013



◆ IEC 62321-4:2013+AMD1:2017



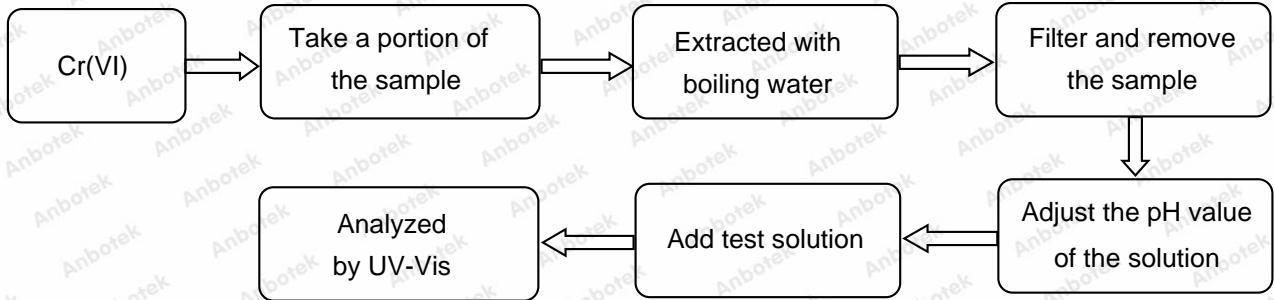
# Test Report

Report No.: 18300RC30164301

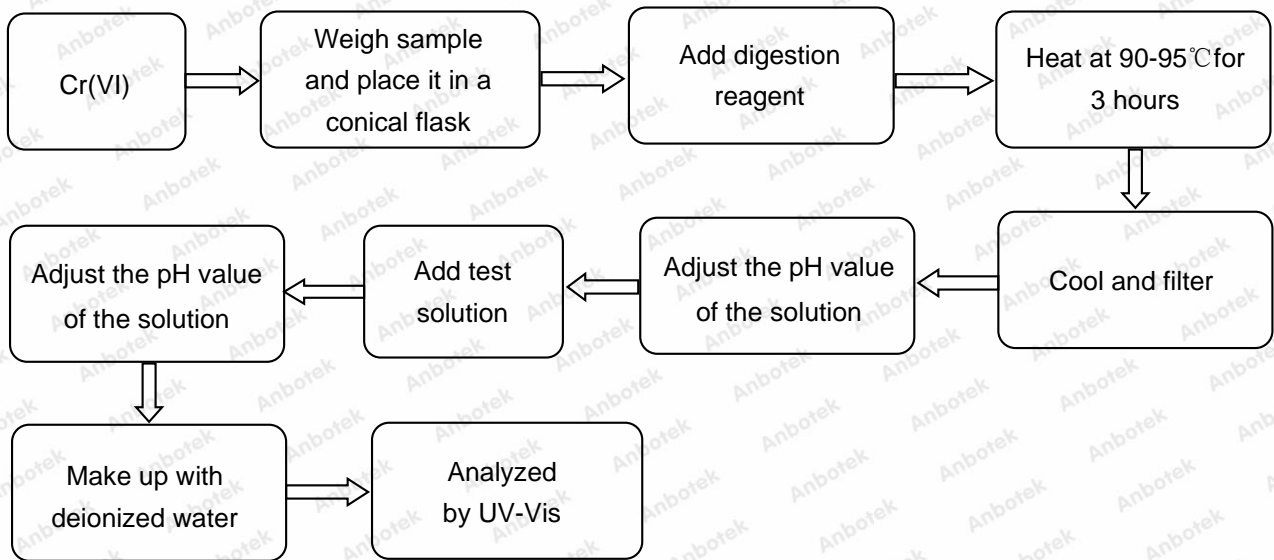
Date: May 16, 2023

Page 12 of 16

◆ IEC 62321-7-1:2015



◆ IEC 62321-7-2:2017



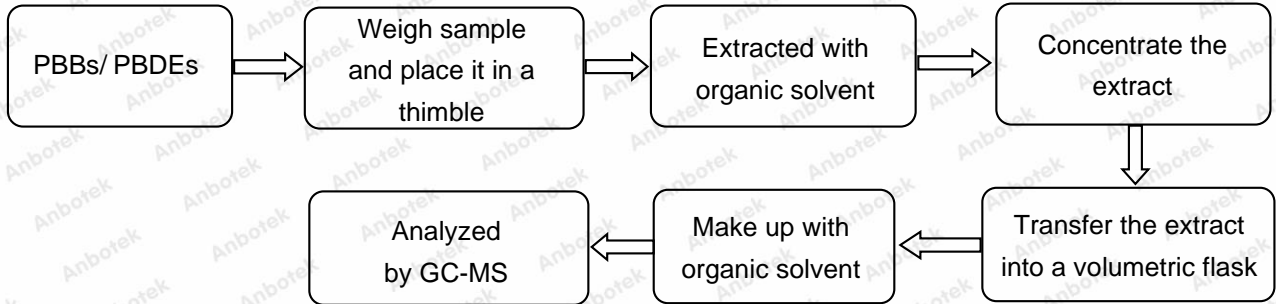
# Test Report

Report No.: 18300RC30164301

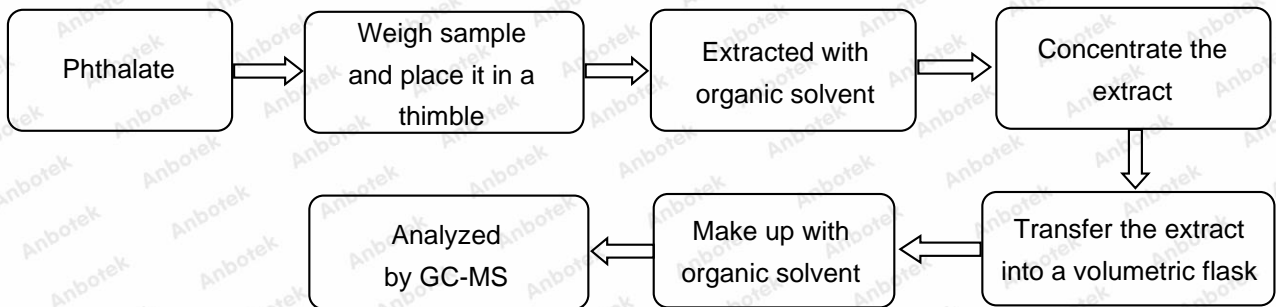
Date: May 16, 2023

Page 13 of 16

◆ **IEC 62321-6:2015**



◆ **IEC 62321-8:2017**



# Test Report

Report No.: 18300RC30164301

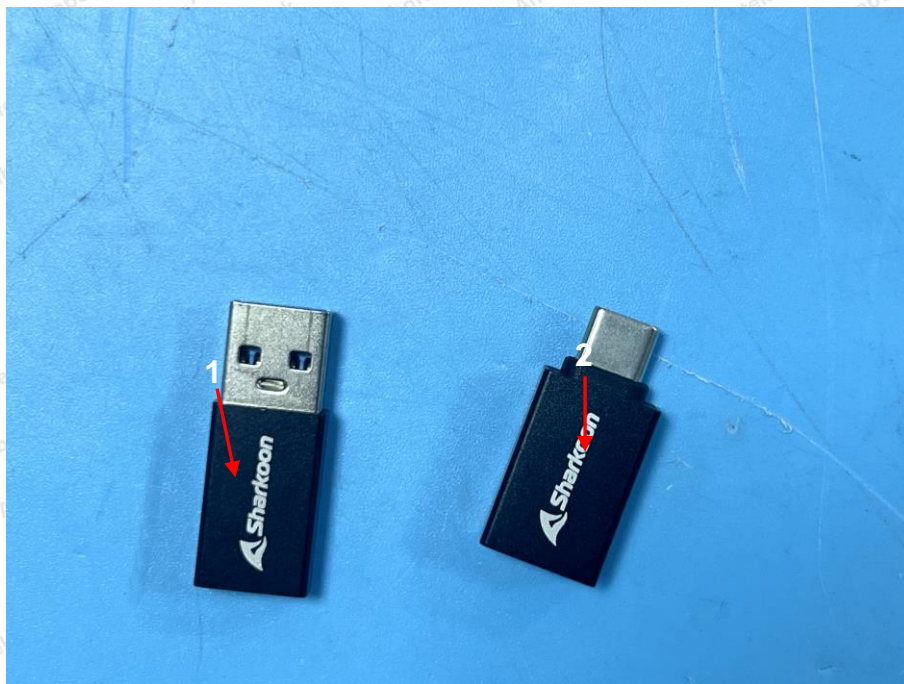
Date: May 16, 2023

Page 14 of 16

## Photograph of Sample



## Photo(s) of the tested component(s)

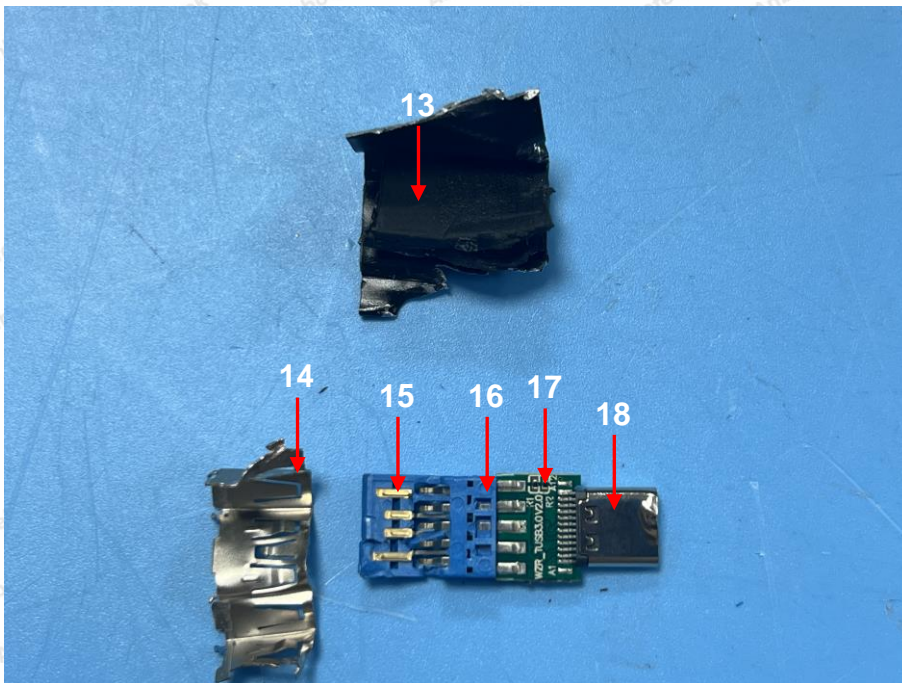
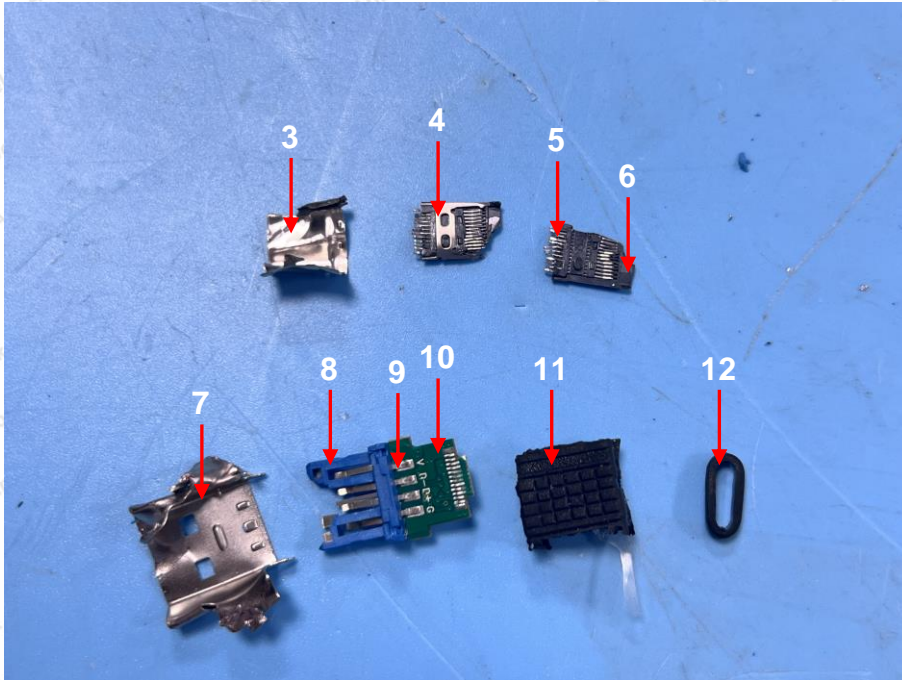


# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 15 of 16



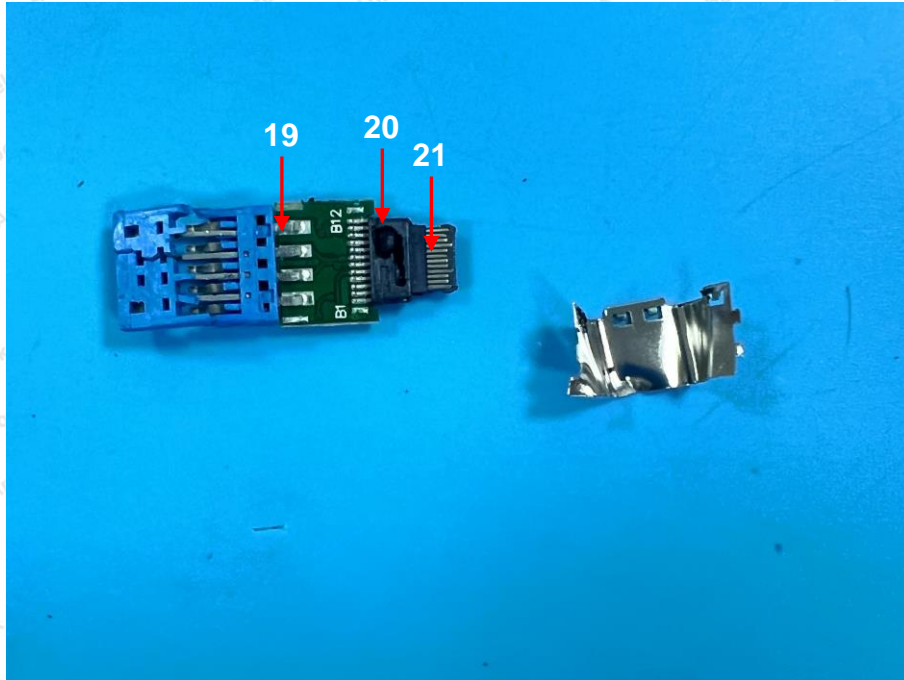


# Test Report

Report No.: 18300RC30164301

Date: May 16, 2023

Page 16 of 16



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

The test report is effective only with both signature and specialized stamp. The result(s) shown in this report refer only to the sample(s) tested. Without written approval of Anbotek, this report can't be reproduced except in full.

