



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 1 of 10

Applicant: 012128
Address: XXXXX
Manufacturer: 012128
Address: XXXXX

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

Sample Name: USB cable **Model :** JD2534
Sample Received Date: Feb.02, 2023
Testing Period: Feb.02, 2023 To Feb.06, 2023
Test Requested:
1. As specified by client ,to screen Lead(Pb),Cadmium(Cd),Mercury(Hg), Chromium(Cr)and Bromine(Br)in the submitted sample(s)by XRF.
2. As specified by client ,when screening results exceed the XRF screening limit in IEC62321:2013 Edition 1.0,further use of wet chemical methods are required to test Lead(Pb),Cadmium(Cd),Mercury(Hg),Hexavalent Chromium(Cr(VI)),Polybrominated Biphenyls(PBBs),Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP) , and Diisobutyl phthalate (DIBP) in the submitted sample(s).
Test Method: Please refer to next page(s).
Test Result: Please refer to next page(s).
Test Conclusion: The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of:

Andy

Andy Zheng
Technical Director



Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.
Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China
Tel:86-769-85088050 4001086960 E-mail:tst@tst-test.com <http://www.tst-test.com>



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 2 of 10

1. Pb, Cd, Cr(VI), Hg, PBBs&PBDEs

Test Method:

A. Disassembly, disjointment and mechanical sample preparation

— Ref. to EN 62321-2:2021, Disassembly, disjointment and mechanical sample preparation.

B. With reference to EN 62321-1:2013, tests were performed for the samples indicated by the photos in this report.

(1) Screening – Lead, mercury, cadmium, total chromium and total bromine

— Ref. to EN 62321-3-1:2013, Screening for Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry.

(2) Wet chemical test method

Test Item(s)	Test Method	Test Equipment	Unit	MDL	Limit
Pb	EN 62321-5:2013	ICP-AES	mg/kg	2	1000
Cd	EN 62321-5:2013	ICP-AES	mg/kg	2	100
Hg	EN 62321-4:2013 /AMD1:2017	ICP-AES	mg/kg	2	1000
Cr(VI) (Metal)	EN 62321-7-1:2015	UV-Vis	μ g/cm2	0.1	0.13
Cr(VI) (Nonmetal)	EN 62321-7-2:2017	UV-Vis	mg/kg	8	1000
PBBs	EN 62321-6:2015	GC-MS	mg/kg	5	1000
PBDEs	EN 62321-6:2015	GC-MS	mg/kg	5	1000

PBBs		PBDEs	
Monobromobiphenyl	Hexabromobiphenyl	Monobromodiphenyl ether	Hexabromodiphenyl ether
Dibromobiphenyl	Heptabromobiphenyl	Dibromodiphenyl ether	Heptabromodiphenyl ether
Tribromobiphenyl	Octabromobiphenyl	Tribromodiphenyl ether	Octabromodiphenyl ether
Tetrabromobiphenyl	Nonabromobiphenyl	Tetrabromodiphenyl ether	Nonabromodiphenyl ether
Pentabromobiphenyl	Decabromobiphenyl	Pentabromodiphenyl ether	Decabromodiphenyl ether

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 3 of 10

Test result(s):

No.	Sample Description	Results of XRF					Chemical confirmation results (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
1	White case	BL	BL	BL	BL	BL	---	Pass
2	Label	BL	BL	BL	BL	BL	---	Pass
3	Black terminal	BL	BL	BL	BL	BL	---	Pass
4	Black wire	BL	BL	BL	BL	BL	---	Pass
5	Wire core	BL	BL	BL	BL	---	---	Pass
6	White plastic	BL	BL	BL	BL	BL	---	Pass
7	USB metal	BL	BL	BL	BL	---	---	Pass
8	Android Metal	BL	BL	BL	BL	---	---	Pass
9	Apple metal	BL	BL	BL	BL	---	---	Pass
10	Silver metal	BL	BL	BL	BL	---	---	Pass
11	White plastic	BL	BL	BL	BL	BL	---	Pass
12	White interface plastic	BL	BL	BL	BL	BL	---	Pass
13	Black interface plastic	BL	BL	BL	BL	BL	---	Pass
14	Pin	BL	BL	BL	BL	---	---	Pass
15	PCB	BL	BL	BL	BL	X	PBBs:N.D. PBDEs:N.D.	Pass
16	Resistance	BL	BL	BL	BL	BL	---	Pass
17	IC	BL	BL	BL	BL	BL	---	Pass
18	Glue	BL	BL	BL	BL	BL	---	Pass
19	Solder	BL	BL	BL	BL	---	---	Pass

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 4 of 10

Remark:

- It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).
- The XRF screening test for RoHS elements-The reading may be different to the actual content in the sample be of non-uniformity composition.
- Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-AES (for Pb, Cd, Hg), UV-VIS for Cr(VI) and GC/MS (for PBBs/PBDEs) is recommended to be performed if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Attached table 1, XRF screening limits in mg/kg for regulated elements in various matrices:

Element	Polymer Material	Metallic Material	Composite Material
Pb	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cd	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma \leq X < 130 + 3\sigma \leq OL$	$LOD < X < 150 + 3\sigma \leq OL$
Hg	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma \leq X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma \leq X < 1500 + 3\sigma \leq OL$
Cr	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

XRF detection limits in mg/kg for regulated elements in various material

Element	Polymer Material	Metallic Material	Composite Material
Pb	10	50	50
Cd	10	50	50
Hg	10	50	50
Cr	10	50	50
Br	10	50	50

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 5 of 10

- Note:**
- BL = Under the XRF screening limit
 - OL = Future chemical test will be conducted while result is above the screening limit
 - X = inconclusive, the region where need further chemical testing by ICP-AES (for Pb, Cd, Hg), UV-VIS (for Cr(VI)) and GC-MS (for PBBs, PBDEs).
 - 3 σ =The reproducibility of analytical instruments
 - LOD=Detection limit
 - “---” = Not Applicable
 - mg/kg=0.0001%
 - N.D.=Not Detected(<MDL)
 - MDL = Method Detection Limit
 - Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.
 - *=According to 2011/65/EU Annex, point *Lead as an alloying element is steel containing up to 0.35% lead by weight, aluminum containing up to 0.4% lead by weight and as a copper alloy, containing up to 4% lead by weight can be exempted.

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 6 of 10

2. Phthalates—DBP, BBP, DEHP & DIBP

Test Item(s)	Test Method	Test Equipment	Unit	MDL	Limit
Dibutyl Phthalate(DBP)	EN 62321-8:2017	GC-MS	mg/kg	30	1000
Benzylbutyl Phthalate (BBP)	EN 62321-8:2017	GC-MS	mg/kg	30	1000
Di-(2-ethylhexyl)Phthalate (DEHP)	EN 62321-8:2017	GC-MS	mg/kg	30	1000
Diisobutyl phthalate(DIBP)	EN 62321-8:2017	GC-MS	mg/kg	30	1000

Test result(s):

Part No.	Test Item (mg/kg)				Conclusion
	DBP	BBP	DEHP	DIBP	
1	N.D.	N.D.	N.D.	N.D.	Pass
2	N.D.	N.D.	N.D.	N.D.	Pass
3+4	N.D.	N.D.	N.D.	N.D.	Pass
6+11	N.D.	N.D.	N.D.	N.D.	Pass
12+13	N.D.	N.D.	N.D.	N.D.	Pass
15	N.D.	N.D.	N.D.	N.D.	Pass
16+17	N.D.	N.D.	N.D.	N.D.	Pass
18	N.D.	N.D.	N.D.	N.D.	Pass

Note: - mg/kg=0.0001%
-N.D.=Not Detected(<MDL)

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

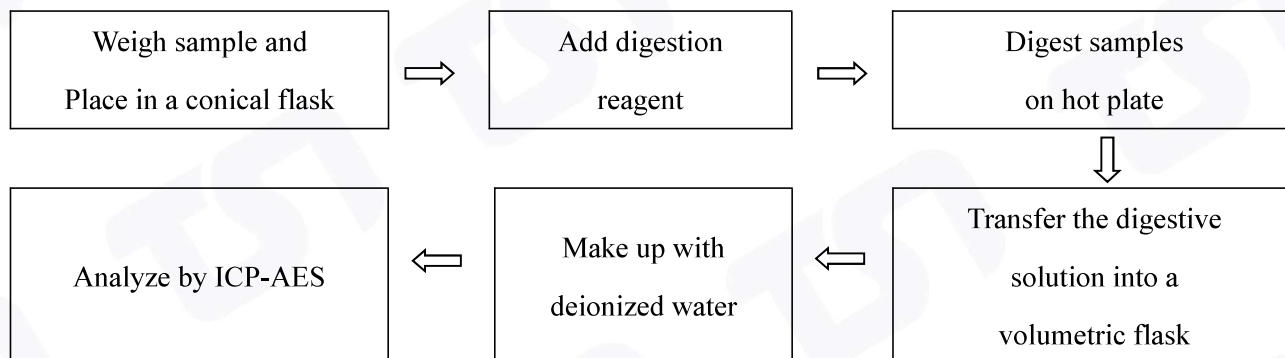
Report No : TST20230280020-3RR

Date: Feb.06, 2023

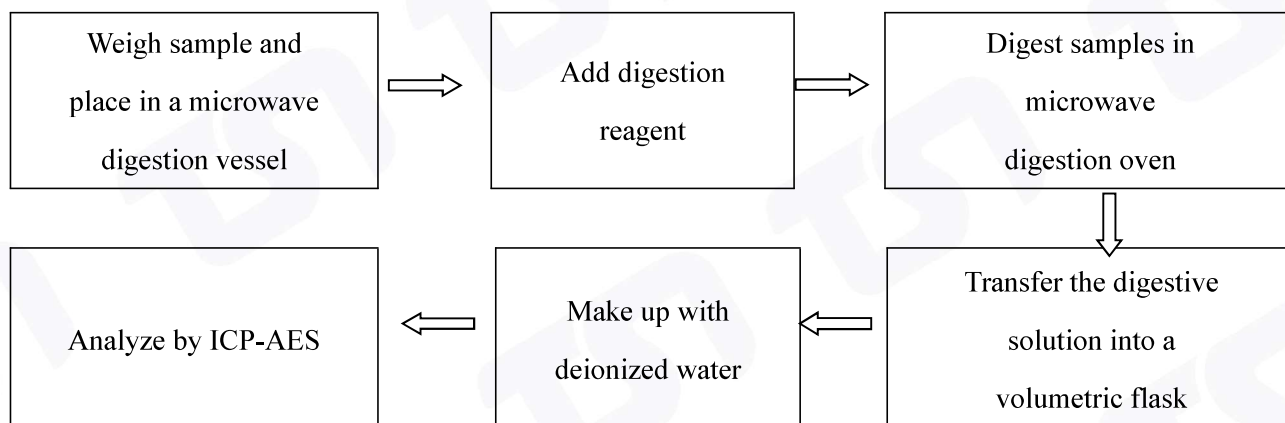
Page 7 of 10

Chemical Test Process:

1. Test for Cd/Pb Content



2. Test for Hg Content



Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



Test Report

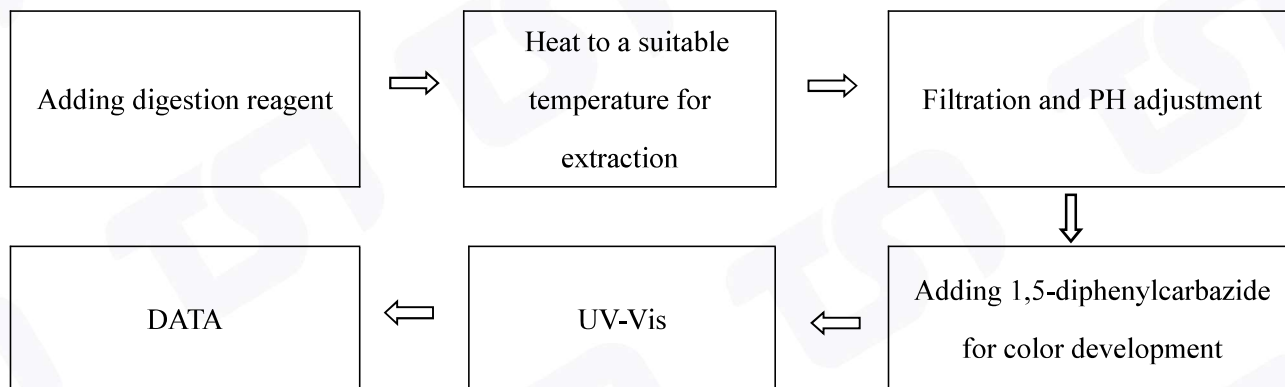
Report No : TST20230280020-3RR

Date: Feb.06, 2023

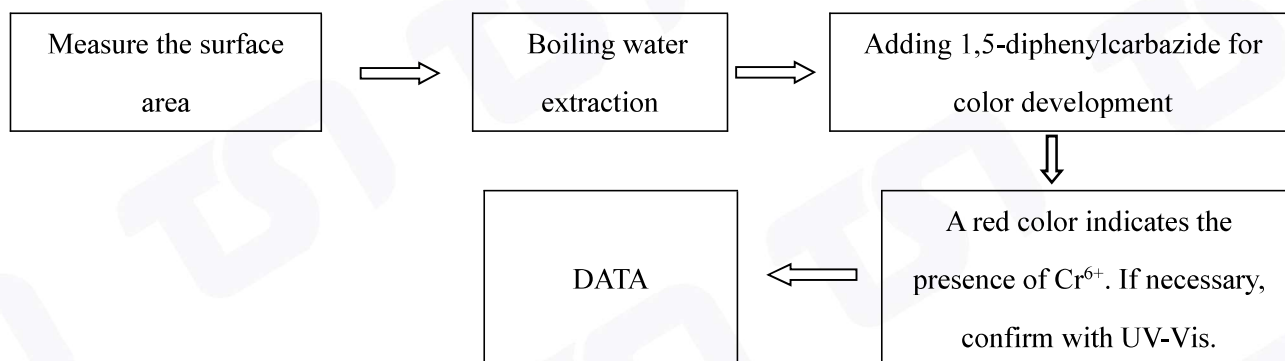
Page 8 of 10

3. Test for Chromium (VI) Content

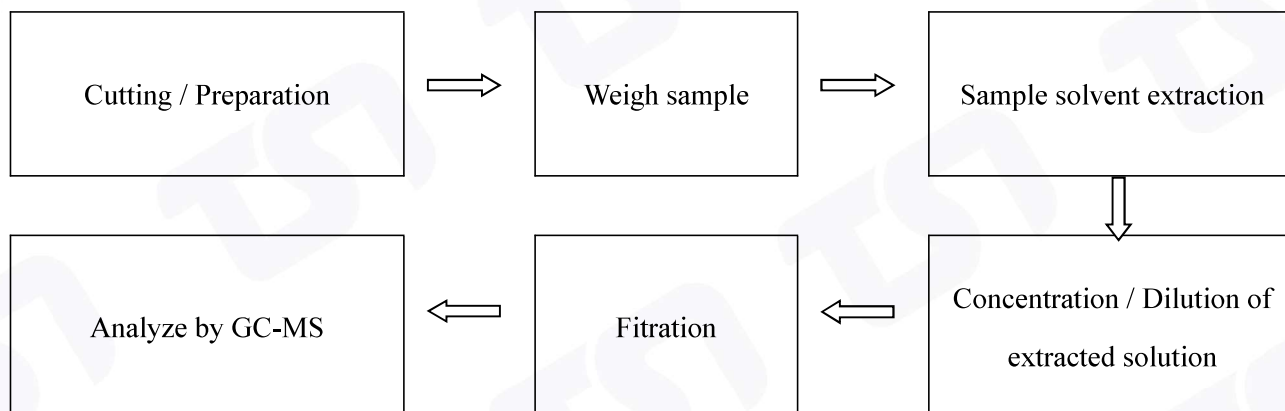
Nonmetal material



Metal material



4. Test for DBP, BBP, DEHP, DIBP, PBB, PBDE Content



Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>



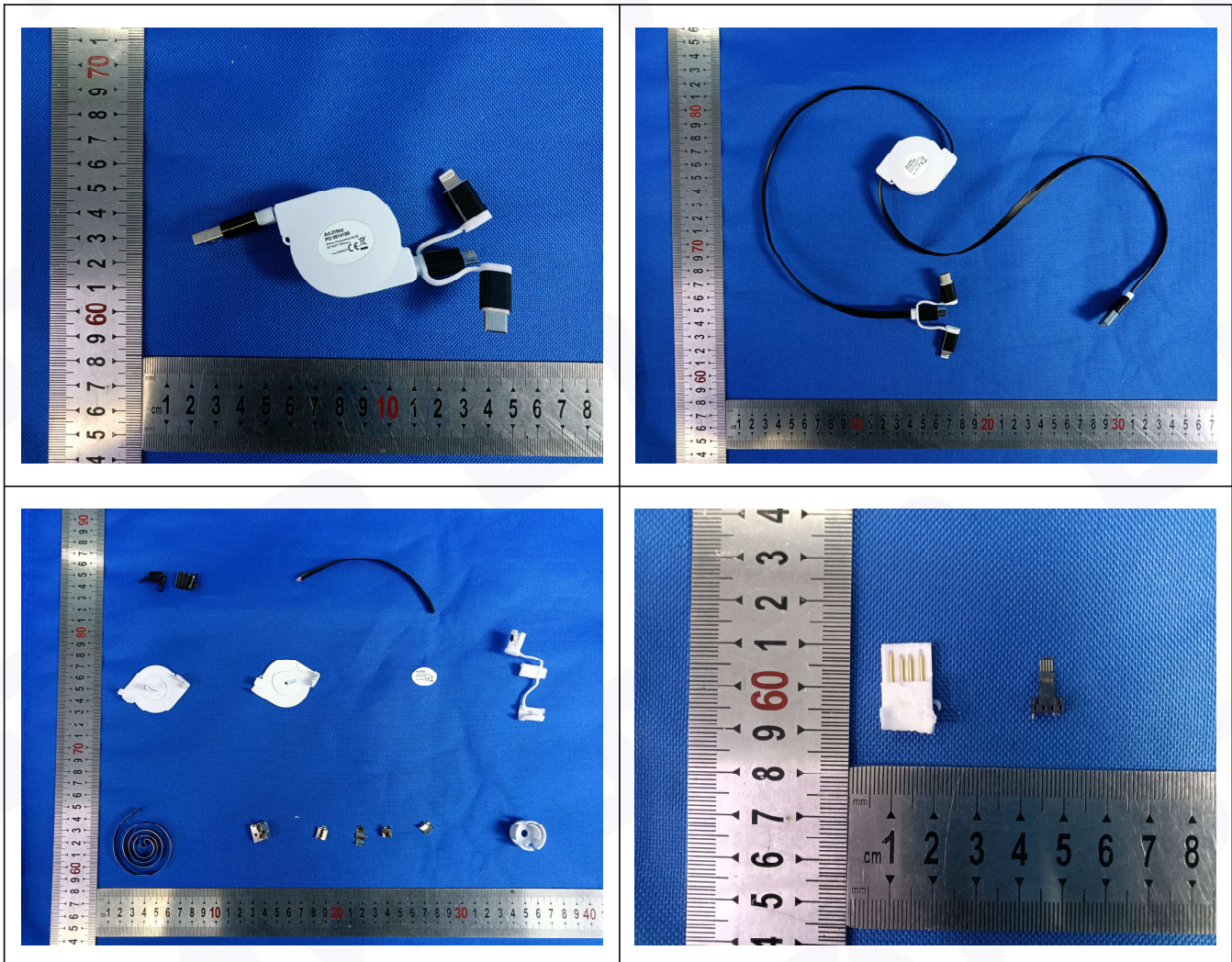
Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 9 of 10

Sample photo:



Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>

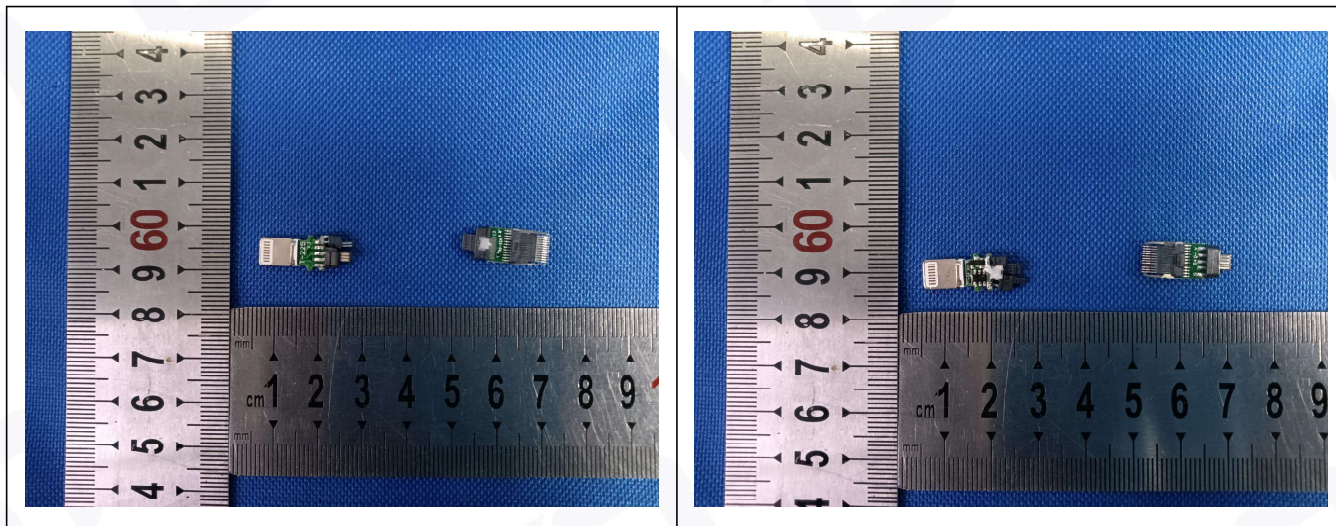


Test Report

Report No : TST20230280020-3RR

Date: Feb.06, 2023

Page 10 of 10



*** End of Report ***

Unless otherwise agreed in writing, this document is issued by the company subject to its general conditions of service printed overleaf, available on request or accessible at <http://www.tst-test.com>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. This report shall not be altered, increased or deleted. The results shown in this test report refer only to the sample(s) tested. Without written approval of TST, this test report shall not be copied except in full and published as advertisement.

Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China

Tel: 86-769-85088050 4001086960 E-mail: tst@tst-test.com <http://www.tst-test.com>