



**CENTRE OF TESTING SERVICE  
INTERNATIONAL**

**OPERATE ACCORDING TO ISO/IEC 17025**

# **TEST REPORT**

**Test Report Number : CTS181219042-C**

**CTS (Ningbo) Testing Service Technology Co., Ltd.**

**Fl.1 & 8 West, Bldg. B, No. 66, Qingyi Rd., Hi-Tech Zone, Ningbo, Zhejiang, China**

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### 1 General Information

#### 1.1 Application Details

Name :  
Address :  
  
Contact :  
Telephone :  
Fax :  
Mobile telephone :  
Email :

#### 1.2 Manufacturer & Buyer

Manufacturer name :  
Address : /  
Contact : /  
Telephone : /  
Fax : /  
Mobile telephone : /  
Email : /  
Buyer name : /

#### 1.3 Description of the Test Item

Sample name : 3 in 1 Charging Cable  
Model No. : S1120, S1122, S1072  
Brand name : /  
Condition of sample(s) : EFFECTIVE

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## 2 Test Results

### 2.1 General Information

#### 2.1.1 Sample Receiving Date

Dec. 19, 2018

#### 2.1.2 Testing Period

Dec. 19, 2018 to Jan. 03, 2019

#### 2.1.3 Test Requested

Please refer to next page(s).

#### 2.1.4 Test Method

Please refer to next page(s).

#### 2.1.5 Test Results

Please refer to next page(s).

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### 2.2 Results

#### 2.2.1 Test results of all parts by EDXRF and chemical confirmation

Based on the performed tests on submitted samples, the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.

Test Method:

1. X-Ray Fluorescence Spectrometry method in reference to IEC 62321-3-1:2013.
2. Chemical test method

Test Item(s)	Sample preparation	Test Method	Test Instrument
Lead (Pb)	With reference to IEC 62321-2:2013	With reference to IEC 62321-5:2013	ICP-AES
Cadmium (Cd)		With reference to IEC 62321-5:2013	ICP-AES
Mercury (Hg)		With reference to IEC 62321-4:2013+A1:2017	ICP-AES
Chromium VI (Cr VI)		With reference to IEC 62321-7-1:2015 IEC 62321-7-2:2017	UV-Vis
PBBs		With reference to IEC 62321-6:2015	GC-MS
PBDEs			

No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
1	White plastic with bright silver printing		P	P	P	P	P	/
2	White plastic with black printing		P	P	P	P	P	/
3	Smeitransparent plastic		P	P	P	P	P	/
4	Wire	Black fibre cable	P	P	P	P	P	/
5		White plastic jacket	P	P	P	P	P	/
6		Dark white plastic cable	P	P	P	P	P	/
7		Black plastic cable	P	P	P	P	P	/
8		Silvery metal wire	P	P	P	P	/	/

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No.	Sample Description		Results					Chemical Confirmation Result (Unit=mg/kg)
			Pb	Cd	Hg	Cr	Br	
9	Jack	Black plastic cover	P	P	P	P	P	/
10		White plastic frame	P	P	P	P	X	10-PBDE=206; Others= N.D.
11		Black plastic frame	P	P	P	X	P	CrVI=N.D.
12		Silvery metal cover	P	P	P	X	/	CrVI=N.D.
13		Coppery metal contact piece	P	P	P	P	/	/
14		Silvery metal contact piece	P	P	P	P	/	/
15	PCB	White fibreboard	P	P	P	P	X	PBBs, PBDEs=N.D.
16		Green fibreboard	P	P	P	P	X	PBBs, PBDEs=N.D.
17		Black fibreboard	P	P	P	P	X	PBBs, PBDEs=N.D.
18		Solder tin	X	P	P	P	/	Pb=N.D.
19		Chip resister	P	P	P	P	P	/
20		Chip capacitor	P	P	P	P	P	/
21		Chip LED	X	P	P	P	P	Pb=379

Note : P = Below Limit (Pass)  
 F = Over Limit (Fail)  
 X = Inconclusive  
 N.D. = not detected (less than MDL)

### Remarks:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Element	Polymer Materials	Metallic Materials	Electronic Materials
Pb	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$
Cd	$P \leq 50 < X < 130 \leq F$	$P \leq 50 < X < 130 \leq F$	$X < 130 \leq F$
Hg	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$	$P \leq 500 < X < 1300 \leq F$

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Cr	$P \leq 700 < X$	$P \leq 700 < X$	$P \leq 500 < X$
Br	$P \leq 250 < X$	/	$P \leq 250 < X$

(2) Chemical Confirmation Result acceptable Limit and Method Detect Limit:

Test items	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (CrVI) by alkaline extraction	Chromium VI (CrVI) by boiling water extraction#	PBBs	PBDEs
Unit	mg/kg	mg/kg	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg
Method Detection Limit	2	2	2	2	0.10	5	5
Acceptable Limit	1000	100	1000	1000	---	1000	1000

Note : 1. #a. The sample is positive for CrVI if the CrVI concentration is greater than  $0.13 \mu\text{g}/\text{cm}^2$ . The sample coating is considered to contain CrVI.  
b. The sample is negative for CrVI if CrVI is N.D. (concentration less than  $0.10 \mu\text{g}/\text{cm}^2$ ). The coating is considered a non-CrVI based coating.  
c. The result between  $0.10 \mu\text{g}/\text{cm}^2$  and  $0.13 \mu\text{g}/\text{cm}^2$  is considered to be inconclusive unavoidable coating variations may influence the determination.  
2. Cr(VI) results represent status of the sample at the time of testing.

(3) The tested part of the sample was specified by client.

### 2.2.2 Phthalates

Based on the performed tests on submitted samples, the results of phthalates comply with the limits as set by RoHS Directive 2011/65/EU Annex II and its amendment 2015/863/EU.

Test Method: Determination of phthalates by GC-MS based on IEC62321-8:2017.

Sample Description	No.1	White plastic with bright silver printing					
	No.2	White plastic with black printing					
	No.3	Smeitransparent plastic					
Substance Name	Limit	Unit	MDL	Result			
				No.1	No.2	No.3	
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.	
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.	
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	0.037	N.D.	N.D.	

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Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.
-----------------------------	-----	---	-------	------	------	------

Sample Description	No.4	Black fibre cable of wire				
	No.5	White plastic jacket of wire				
	No.6	Dark white plastic cable of wire				
Substance Name	Limit	Unit	MDL	Result		
				No.4	No.5	No.6
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.	N.D.	N.D.
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.

Sample Description	No.7	Black plastic cable of wire				
	No.9	Black plastic cover of jack				
	No.10	White plastic frame of jack				
Substance Name	Limit	Unit	MDL	Result		
				No.7	No.9	No.10
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	0.032	N.D.	N.D.
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.

Sample Description	No.11	Black plastic frame of jack				
	No.15	White fibreboard of PCB				
	No.16	Green fibreboard of PCB				
Substance Name	Limit	Unit	MDL	Result		
				No.11	No.15	No.16
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.	N.D.	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	0.035	N.D.	N.D.
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.	N.D.	N.D.

Sample Description		No.17		Black fibreboard of PCB		
Substance Name		Limit	Unit	MDL	Result	

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				No.17
Dibutyl phthalate (DBP)	0.1	%	0.005	N.D.
Benzyl butyl phthalate (BBP)	0.1	%	0.005	N.D.
Bis (2-ethyl(hexyl)phthalate) (DEHP)	0.1	%	0.005	N.D.
Diisobutyl phthalate (DIBP)	0.1	%	0.005	N.D.

Note : 1. N.D. = not detected (less than MDL)  
2. MDL= Method Detect Limit  
3. The maximum permissible limit is quoted from the directive 2011/65/EU, Annex II and its amendment 2015/863/EU.

Written by: Amanda

Inspected by: Annie

Approved by: Ben

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



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### 3 Sample Reference Photo



S1072



S1120

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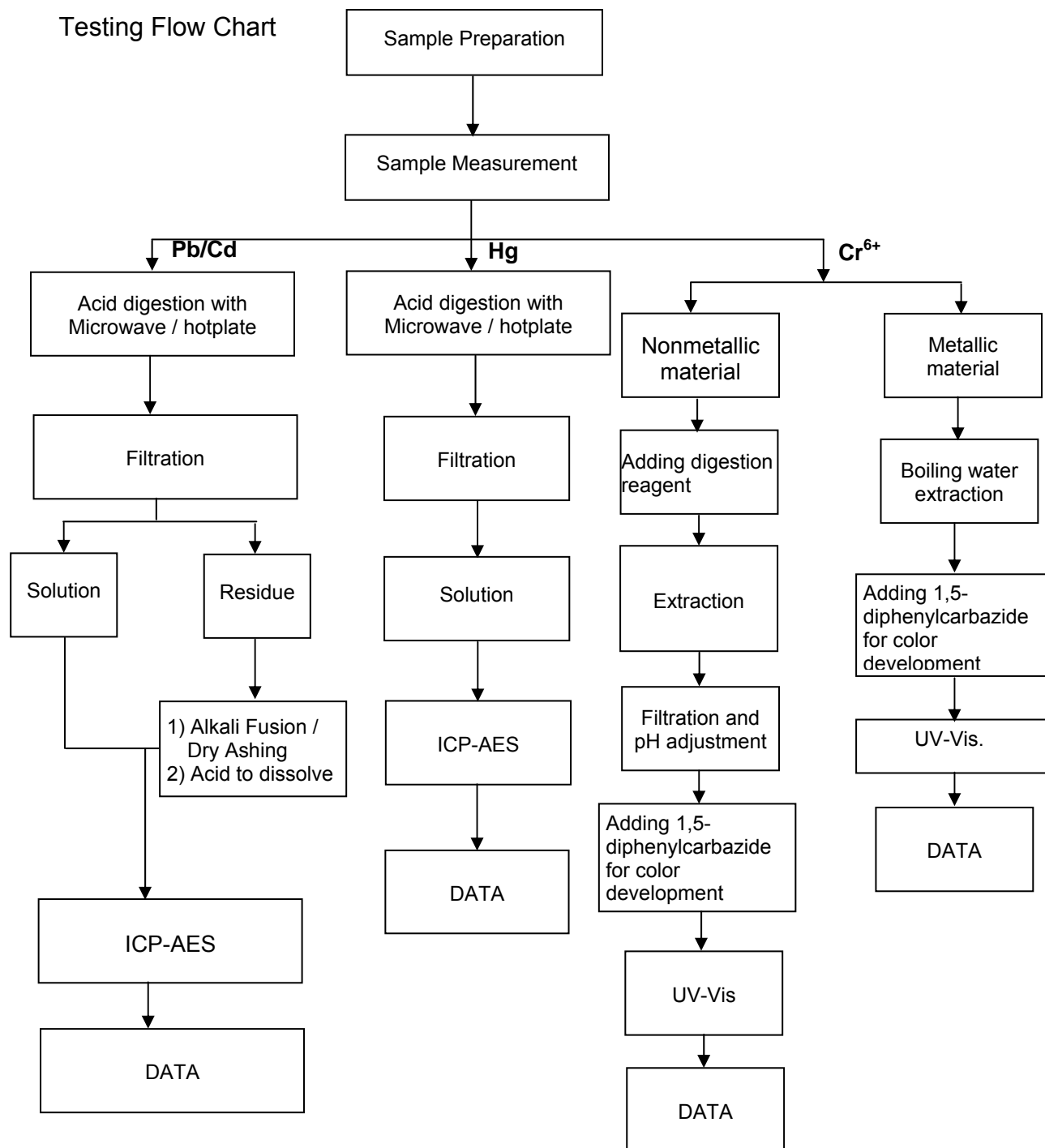
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### 4 Attachment

Testing Flow Chart



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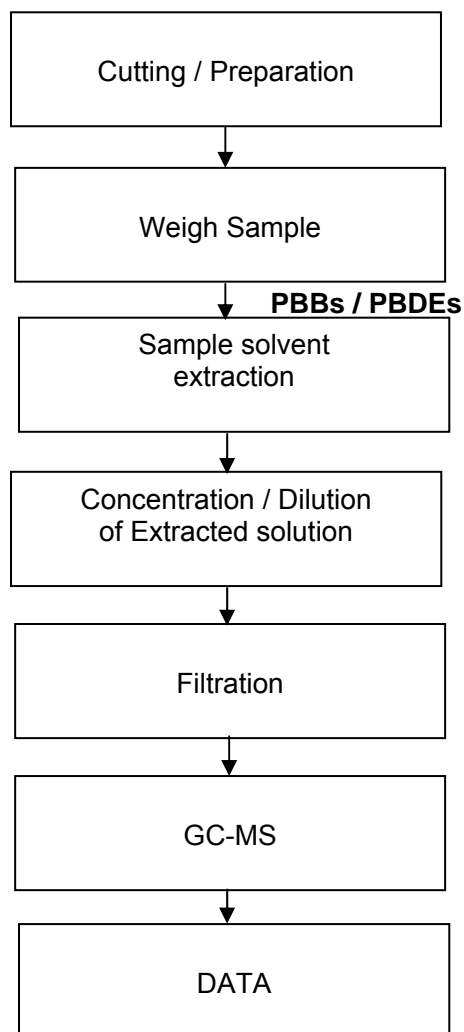
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### Testing Flow Chart



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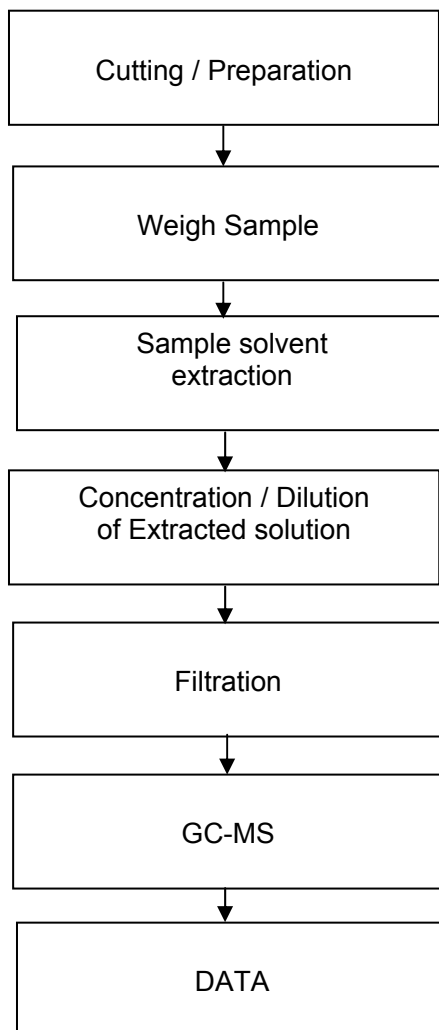
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### Phthalates Testing Flow Chart



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