

# Test Report

No.BCTC-FYC19041259R

Date:Apr. 09, 2019

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**Applicant** : Wuxi Warmspace Tec Co., Ltd

**Address** : Flat804, Block 3 No.2018, Lihu Avenue, Binhu District, Wuxi, Jiangsu Province, P.R. China

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

**Sample name** : Outdoor electric heating equipment

**Testing type /model** : WS-GF0126

**Additional type /model** : WS-G0120C ·WS-GA0340B ·WS-GA680A ·WS-GA800A ·S-GA840A ·WS-GA850A ·WS-GA860A ·WS-GA690A ·WS-SE220L ·S-SE330LA ·WS-SE336L ·WS-SE360 ·WS-SE380 ·WS-X04AF ·WS-X01D ·WS-Y06AF ·WS-Y01A ·WS-W01A ·WS-N002 ·WS-N003 ·S-WN100 ·WS-WB100 ·WS-WB200 ·WS-WB30

**Sample received date** : Apr. 01, 2019

**Testing period** : Apr. 01, 2019 - Apr. 09, 2019

**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 IEC 62321-3-1:2013, further use of chemical methods are required to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted samples.
3. As specified by client, to test the Di-isobutyl phthalate(DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Bis(2-ethyl(hexyl) phthalate)(DEHP)in the submitted sample(s).

**According to the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863**

\*\*\*\*\*For more detailed information, please refer to the next page\*\*\*\*\*

Tested by



Xingping Li



Approved by



Hanyao Chen

**Lab:Shenzhen BCTC Testing Co.,Ltd.**

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## Test Method:

### A. Screening test by XRF spectroscopy

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)		MDL	
	Polymers and metals	Composite material	Polymers	Other material
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10 mg/kg	50 mg/kg
Br	$BL \leq (300-3\sigma) < X$	$BL \leq (250-3\sigma) < X$	10 mg/kg	50 mg/kg

## Note:

-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 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	/	1000 mg/kg
	IEC 62321-7-2:2017 Ed.1.0		8 mg/kg	1000 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
Phthalates	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg

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**Test Results:**

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
1	Black cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	2261	N.D.	
		Br(PBBs&PBDEs)	BL	/	
2	Blue cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
3	Silver-gray cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
4	Dark blue cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	2113	N.D.	
5	Black cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
6	Black plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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7	Black cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
8	Black flannelette	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	BL	/	
9	Black metal	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	/	/	
10	Silver metal	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI) )	BL	/	
		Br(PBBs&PBDEs)	/	/	

Tested Item(s)	Results									
	Unit (mg/kg)									
1	2	3	4	5	6	7	8	9	10	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	N.D.	N.D.	N.D.	153	N.D.	N.D.	N.D.	N.D.	/	/
Dibutyl phthalate(DBP) CAS #:84-74-2	N.D.	N.D.	N.D.	N.D.	N.D.	63	N.D.	N.D.	/	/
Benzylbutyl phthalate(BBP) CAS #:85-68-7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	/	/
Bis(2-ethyl(hexyl) phthalate)(DEHP) CAS #:117-81-7	N.D.	N.D.	N.D.	N.D.	N.D.	405	N.D.	N.D.	/	/

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## Note:

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than  $0.1\mu\text{g}/\text{cm}^2$  with  $50\text{cm}^2$  sample surface area used.

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than  $0.13\mu\text{g}/\text{cm}^2$  with  $50\text{cm}^2$  sample surface area used.

## Remark:

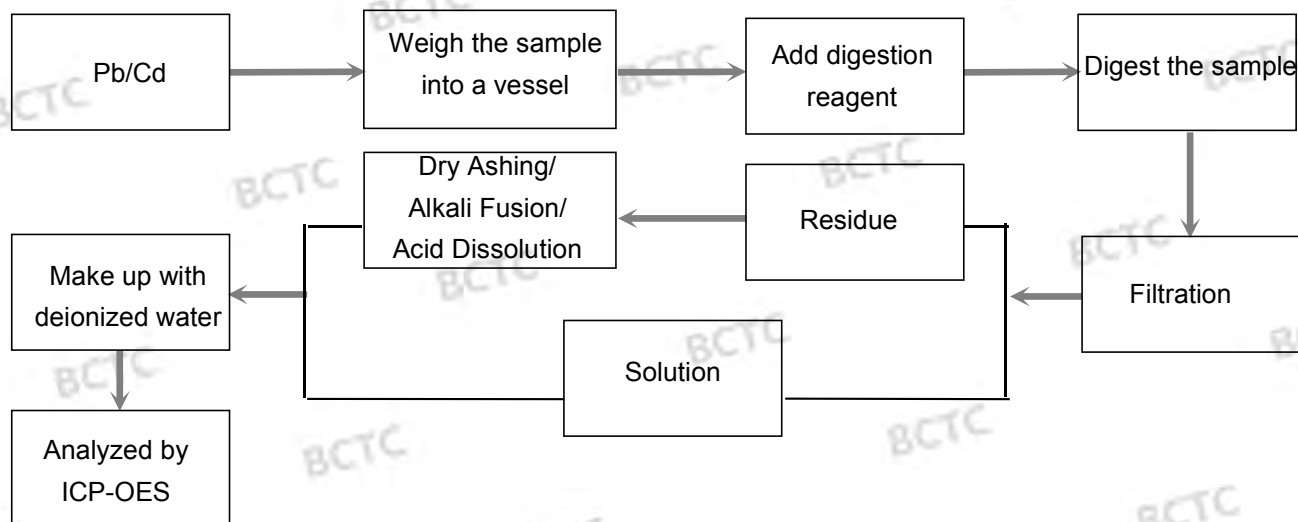
- The screening results are only used for reference.

- 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.

## Test Process:

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

◆IEC 62321-5:2013 Ed.1.0



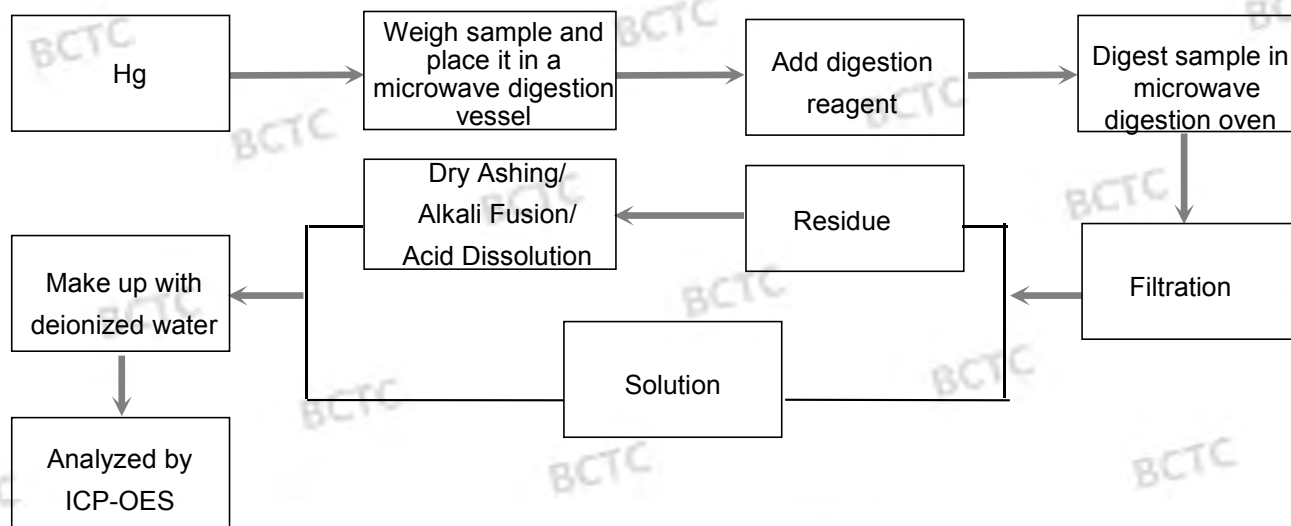
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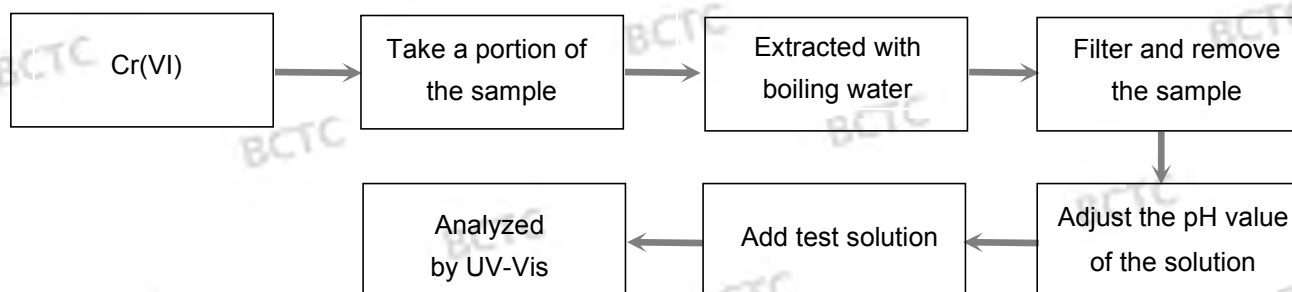
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◆IEC 62321-4:2013+AMD1:2017



◆IEC 62321-7-1:2015 Ed.1.0



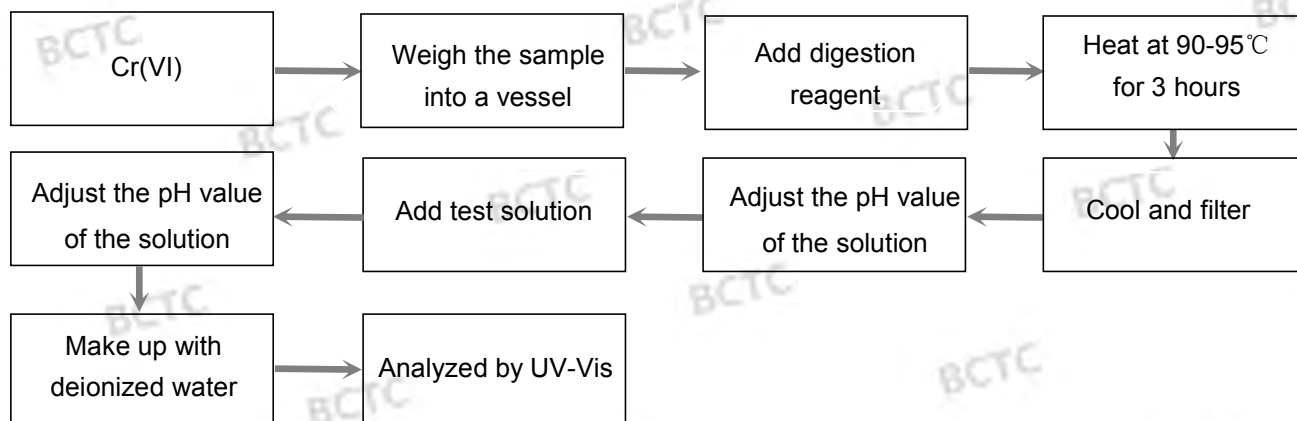
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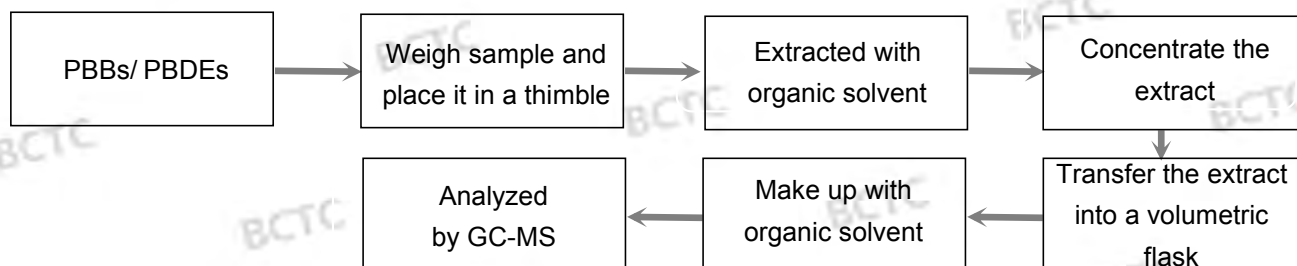
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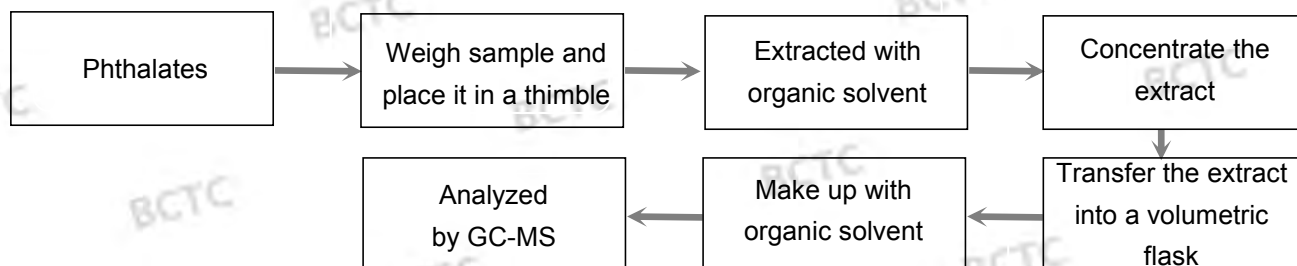
◆IEC 62321-7-2:2017 Ed.1.0



◆IEC 62321-6:2015 Ed.1.0



◆IEC 62321-8:2017 Ed.1.0



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## Photograph of Sample



Fig.1



Fig.2

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Photo(s) of the tested component(s)

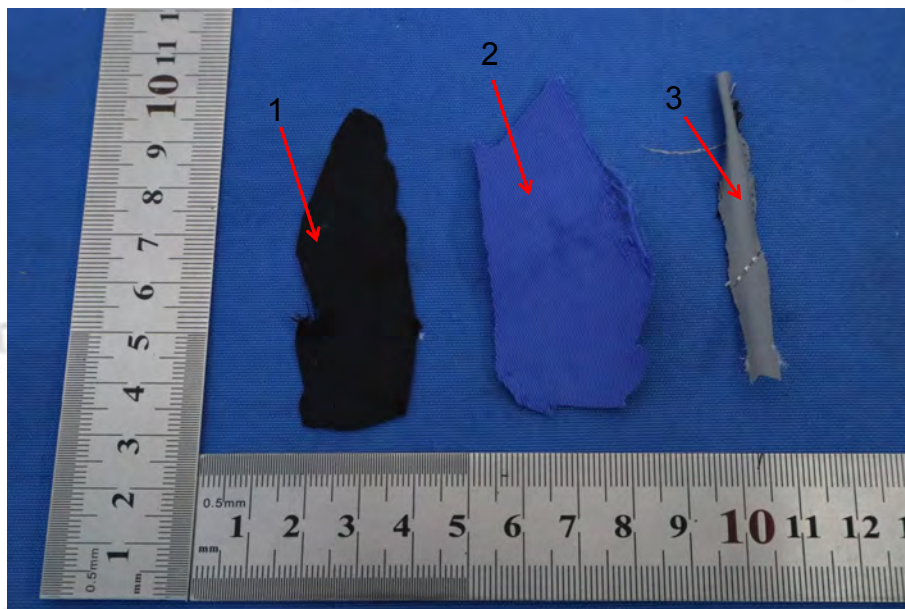


Fig.3

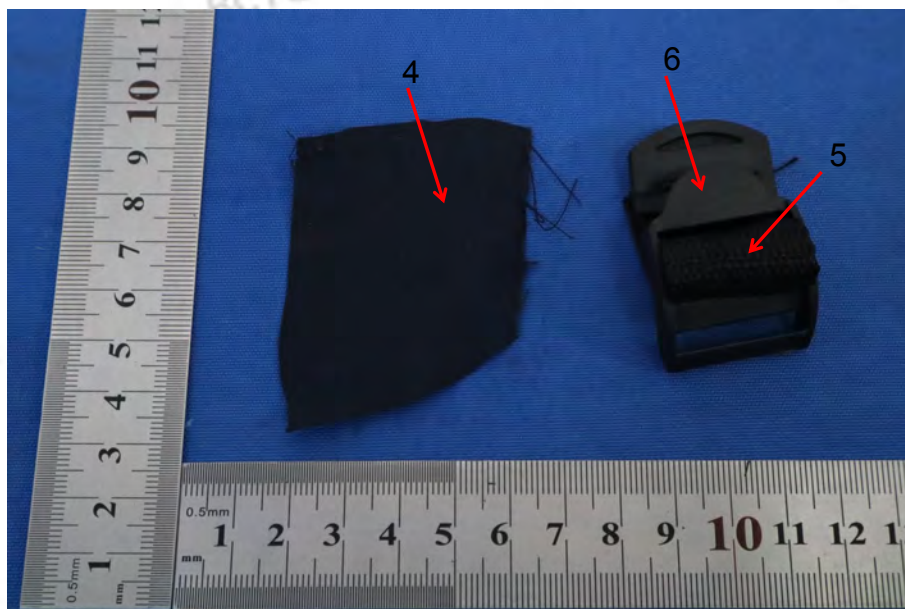


Fig.4

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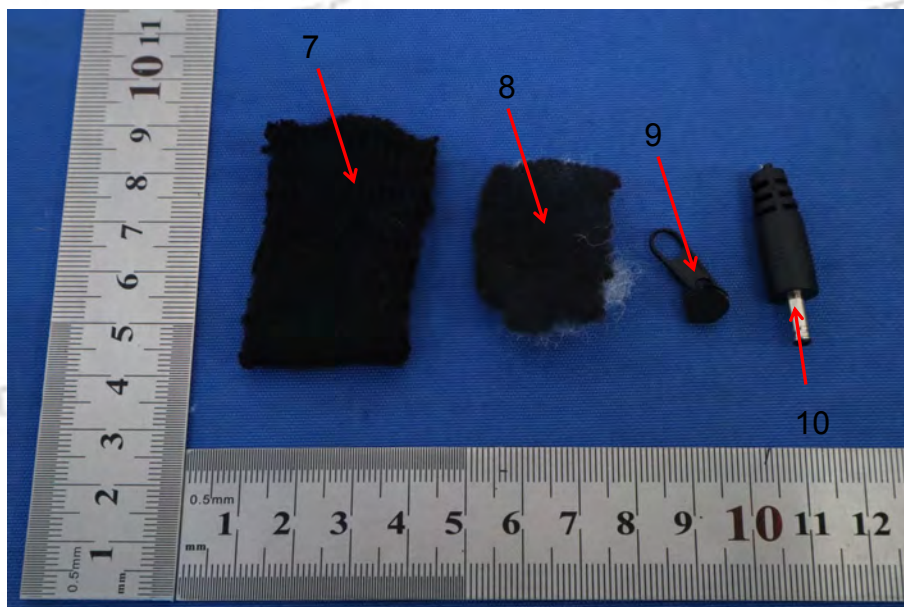


Fig.5

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

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