



Test Report

Report No. A223054883610107

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Company Name SUZHOU WALTER ELECTRONIC CO., LTD
shown on Report WALTER ELECTRONIC TECHNOLOGY LIMITED
 HONG KONG WALTER ELECTRONIC TECHNOLOGY LIMITED, TAIWAN
 BRANCH
Address NO.99, XINLI ROAD, FENHU HI-TECH INDUSTRIAL DEVELOPMENT ZONE,
 WUJIANG DISTRICT, SUZHOU, JIANGSU, CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

CTI Sample ID	Final Product Name	Product line	Sample Name(s)
001	Plastic fuses	2000、2001、2010、2012、 2020、2030、2040、3010、 SHH、SHT	Case
002			Inner base
006			Tinned copper wire
007			Lead-free solder wire
009			Fuse wire
010			White glass fibre thread
011			Explosion-proof sand

Sample Received Date Oct. 25, 2023
 Testing Period Oct. 25, 2023 to Nov. 1, 2023

Test Requested As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Beryllium(Be), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Phthalates, Red phosphorus in the submitted sample(s).

Test Method/Test Result(s) Please refer to the following page(s).



Approved by Hill Zheng
 Hill Zheng
 Technical Manager

Date Nov. 1, 2023

No. R158921608

Centre Testing International Group Co.,Ltd.
 CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

Test Report

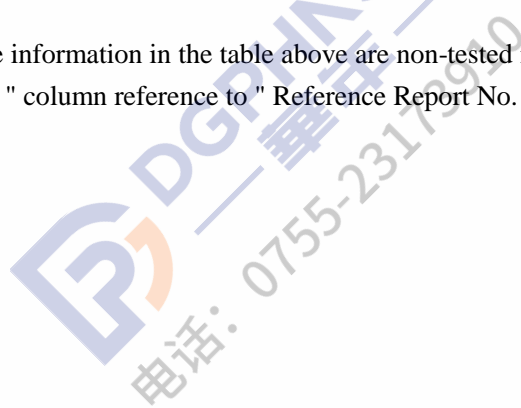
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CTI Sample ID	Reference Report No. - CTI Sample ID
001	A2230548836101001
002	A2230548836101002
006	A2230548836101006
007	A2230548836101007
009	A2230548836101009
010	A2230548836101010
011	A2230548836101011

Remark:

The samples with the reference information in the table above are non-tested in this report. Test results and the photos of the " CTI Sample ID " column reference to " Reference Report No. - CTI Sample ID " column.



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Test Method

Tested Item(s)	Test Method	Measured Equipment(s)
Lead (Pb)	IEC 62321-5:2013	ICP-OES
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015	UV-Vis
	IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
Beryllium(Be)	Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
Fluorine (F)	Refer to EN 14582:2016	IC
Chlorine (Cl)	Refer to EN 14582:2016	IC
Bromine (Br)	Refer to EN 14582:2016	IC
Iodine (I)	Refer to EN 14582:2016	IC
Perfluorooctane Sulfonates(PFOS)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Perfluorooctanoic Acid(PFOA)	Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS
Red phosphorus	GB/T 9722-2006	PY-GC-MS

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Test Result(s)

Tested Item(s)	Result			MDL
	001	002	006	
Lead (Pb)	N.D.	N.D.	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	N.D.	--	8 mg/kg
	--	--	N.D.▼	0.10 µg/cm ² (LOQ)

Tested Item(s)	Result			MDL
	007	009	010	
Lead (Pb)	20 mg/kg	N.D.	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	N.D.	N.D.	2 mg/kg
Mercury (Hg)	N.D.	N.D.	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	--	--	N.D.	8 mg/kg
	N.D.▼	N.D.▼	--	0.10 µg/cm ² (LOQ)

Tested Item(s)	Result	MDL
	011	
Lead (Pb)	N.D.	2 mg/kg
Cadmium (Cd)	N.D.	2 mg/kg
Mercury (Hg)	N.D.	2 mg/kg
Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg
	--	0.10 µg/cm ² (LOQ)

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Tested Item(s)	Result			MDL
	001	002	010	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
	011	
Polybrominated Biphenyls (PBBs)		
Monobromobiphenyl	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	5 mg/kg

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Tested Item(s)	Result			MDL
	006	007	009	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Dibromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tribromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Pentabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Hexabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Heptabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Octabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Nonabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg
Decabromobiphenyl	N.D.	N.D.	N.D.	5 mg/kg

Tested Item(s)	Result			MDL
	001	002	010	
Polybrominated Diphenyl Ethers (PBDEs)				
Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

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Tested Item(s)	Result		MDL
	011		
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.		5 mg/kg
Dibromodiphenyl ether	N.D.		5 mg/kg
Tribromodiphenyl ether	N.D.		5 mg/kg
Tetrabromodiphenyl ether	N.D.		5 mg/kg
Pentabromodiphenyl ether	N.D.		5 mg/kg
Hexabromodiphenyl ether	N.D.		5 mg/kg
Heptabromodiphenyl ether	N.D.		5 mg/kg
Octabromodiphenyl ether	N.D.		5 mg/kg
Nonabromodiphenyl ether	N.D.		5 mg/kg
Decabromodiphenyl ether	N.D.		5 mg/kg

Tested Item(s)	Result			MDL
	006	007	009	
Polybrominated Diphenyl Ethers (PBDEs)				
Monobromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Dibromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tribromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Tetrabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Pentabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Hexabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Heptabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Octabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Nonabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg
Decabromodiphenyl ether	N.D.	N.D.	N.D.	5 mg/kg

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Tested Item(s)	Result			MDL
	001	002	010	
Phthalates (DBP, BBP, DEHP, DIBP)				
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg

Tested Item(s)	Result	MDL
	011	
Phthalates (DBP, BBP, DEHP, DIBP)		
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

Tested Item(s)	Result			MDL
	006	007	009	
Phthalates (DBP, BBP, DEHP, DIBP)				
Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	N.D.	N.D.	50 mg/kg
Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	N.D.	N.D.	50 mg/kg
Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	N.D.	N.D.	50 mg/kg
Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	N.D.	N.D.	50 mg/kg

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Tested Item(s)	Result			MDL
	006	007	009	
Beryllium (Be)	N.D.	N.D.	N.D.	2 mg/kg

Tested Item(s)	Result			MDL
	001	002	007	
Fluorine (F)	N.D.	N.D.	N.D.	10 mg/kg
Chlorine (Cl)	N.D.	N.D.	N.D.	10 mg/kg
Bromine (Br)	N.D.	N.D.	N.D.	10 mg/kg
Iodine (I)	N.D.	N.D.	N.D.	10 mg/kg

Tested Item(s)	Result		MDL
	010	011	
Fluorine (F)	2682 mg/kg	N.D.	10 mg/kg
Chlorine (Cl)	N.D.	N.D.	10 mg/kg
Bromine (Br)	N.D.	N.D.	10 mg/kg
Iodine (I)	N.D.	N.D.	10 mg/kg

Tested Item(s)	Result			MDL
	006	007	009	
Perfluorooctane Sulfonates (PFOS)	N.D.	N.D.	N.D.	0.010 mg/kg

Tested Item(s)	Result	MDL
	010	
Perfluorooctane Sulfonates (PFOS)	N.D.	0.010 mg/kg

Tested Item(s)	Result			MDL
	006	007	009	
Perfluorooctanoic Acid (PFOA)	N.D.	N.D.	N.D.	0.010 mg/kg

Tested Item(s)	Result	MDL
	010	
Perfluorooctanoic Acid (PFOA)	N.D.	0.010 mg/kg

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Tested Item(s)	Result		MDL
	001	002	
Phthalates			
Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	N.D.	30 mg/kg
Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	N.D.	50 mg/kg
Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	N.D.	50 mg/kg
Di-n-hexyl phthalate (DNHP/DHEXP) CAS#:84-75-3	N.D.	N.D.	30 mg/kg

Tested Item(s)	Result		MDL
	001	002	
Red phosphorus	Negative	Negative	500 mg/kg

Sample/Part Description

No.	CTI Sample ID	Description
1	001	Fuchsia plastic
2	002	Black plastic
3	006	Metal with silvery plating
4	007	Silvery metal
5	009	Silvery metal
6	010	Beige white thread
7	011	Light grey powder

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 $\mu\text{g}/\text{cm}^2$

-▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 $\mu\text{g}/\text{cm}^2$. The coating is considered a non-Cr(VI) based coating. Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

-Negative = Not Contained (The red phosphorus is qualified by PY-GC-MS method which detect pyrolysis products P_4 of red phosphorus. But there is a false positive risk by performing this method, since P_4 could also generate while the phosphate and organic phosphate coexist with some strong oxidizing or reductant agent in pyrolysis process. The result for reference only.)

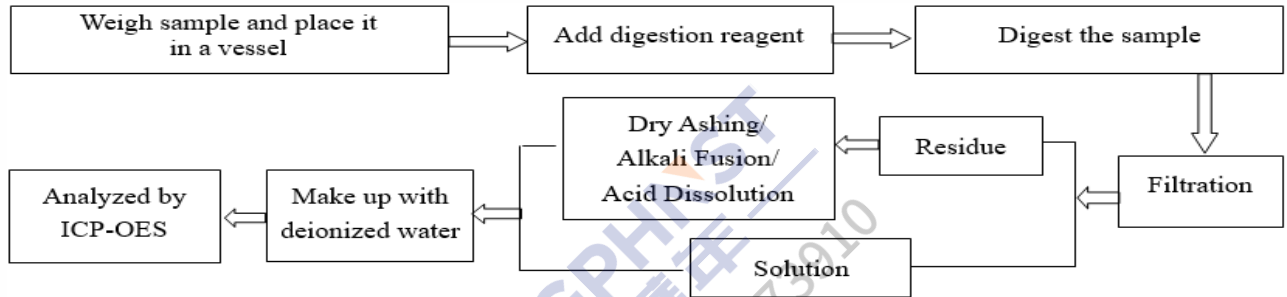
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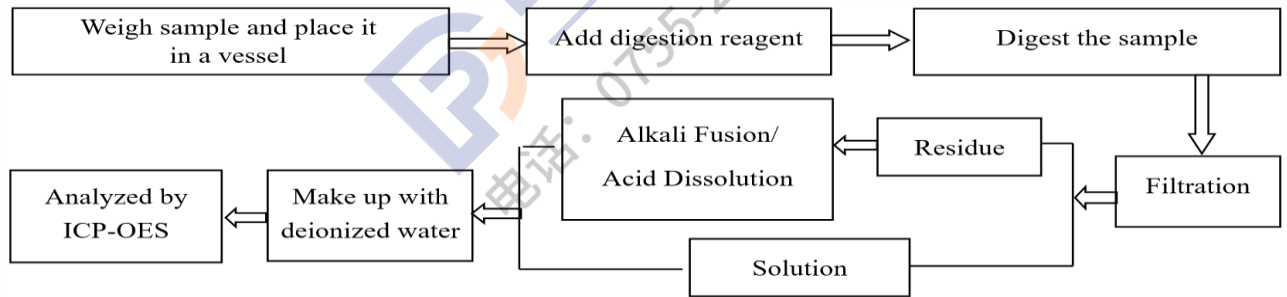
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Test Process

1. Lead (Pb), Cadmium (Cd), Chromium(Cr)

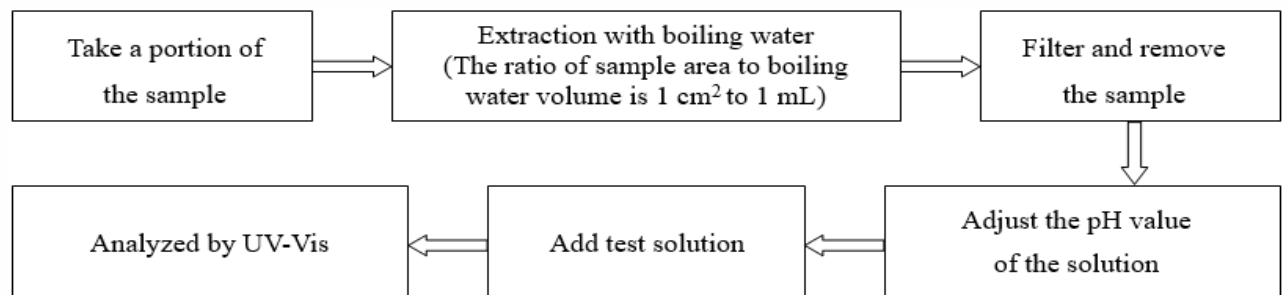


2. Mercury (Hg)

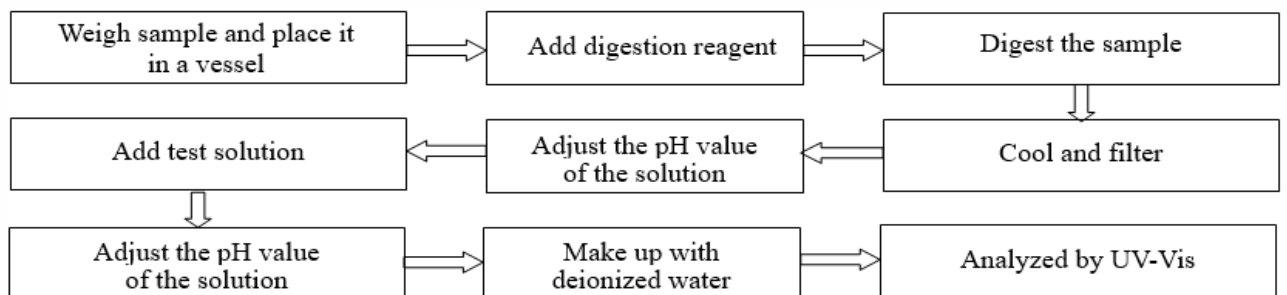


3. Hexavalent Chromium (Cr(VI))

(1) IEC 62321-7-1:2015



(2) IEC 62321-7-2:2017

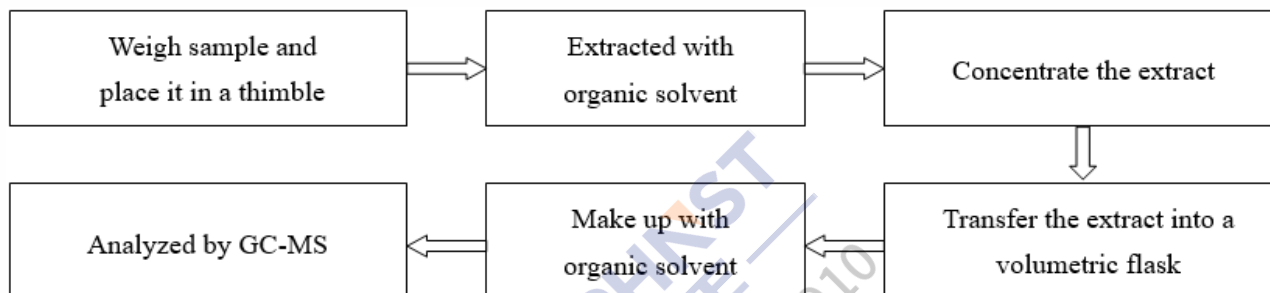


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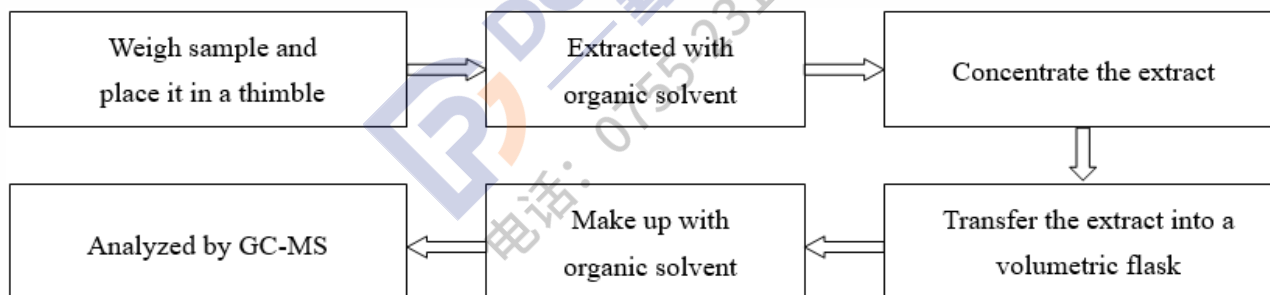
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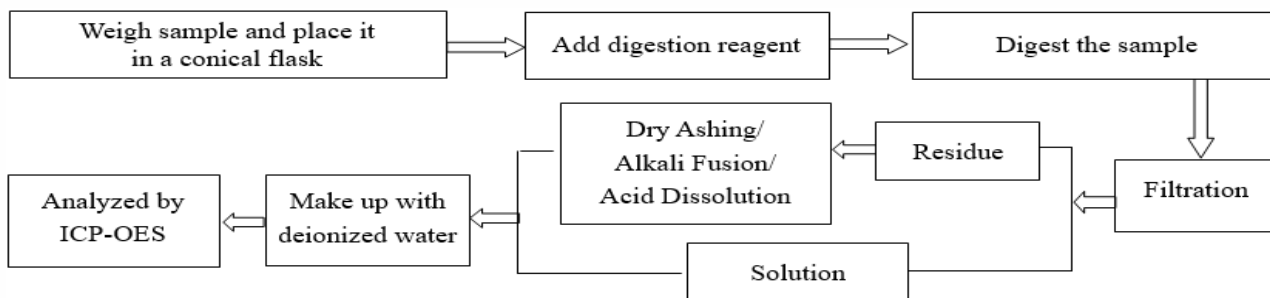
4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



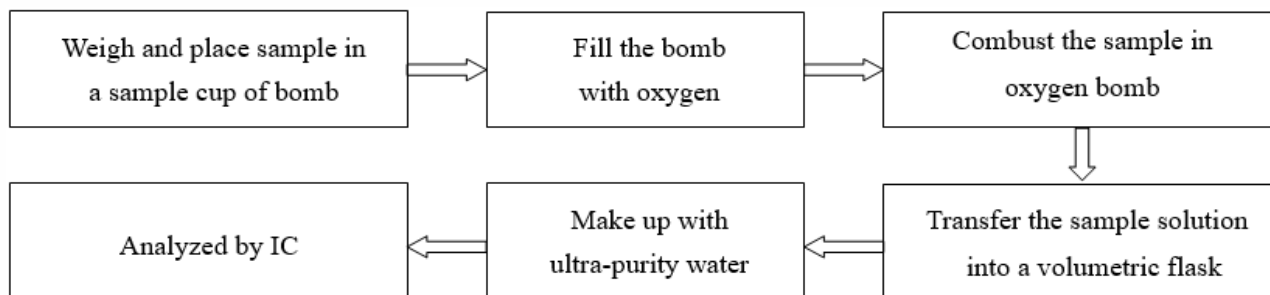
5. Phthalates (DBP, BBP, DEHP, DIBP)



6. Beryllium(Be)



7. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)

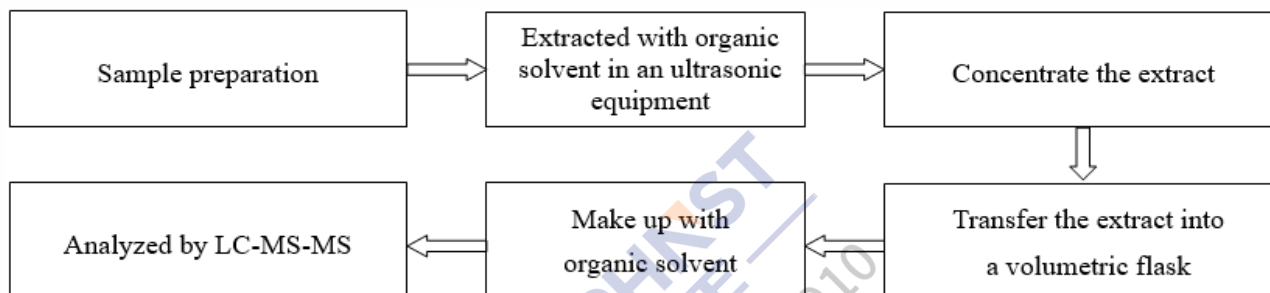


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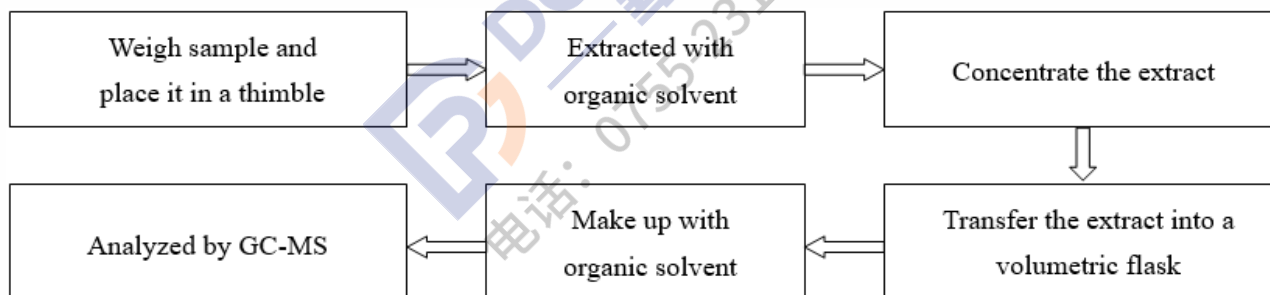
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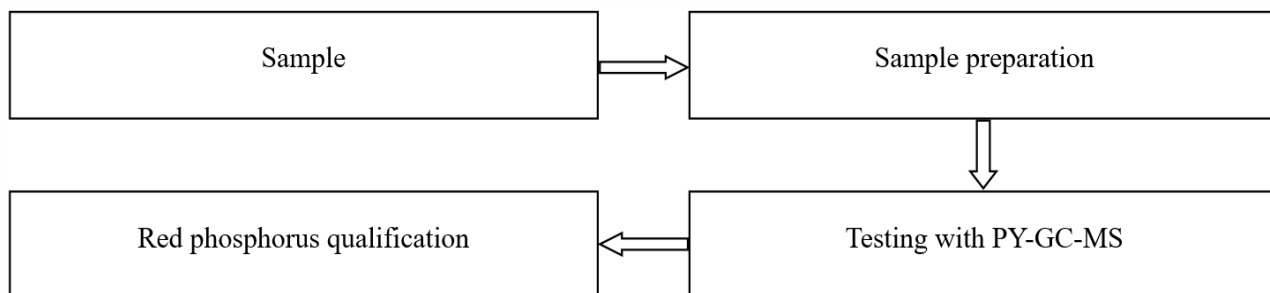
8. Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)



9. Phthalates



10. Red phosphorus

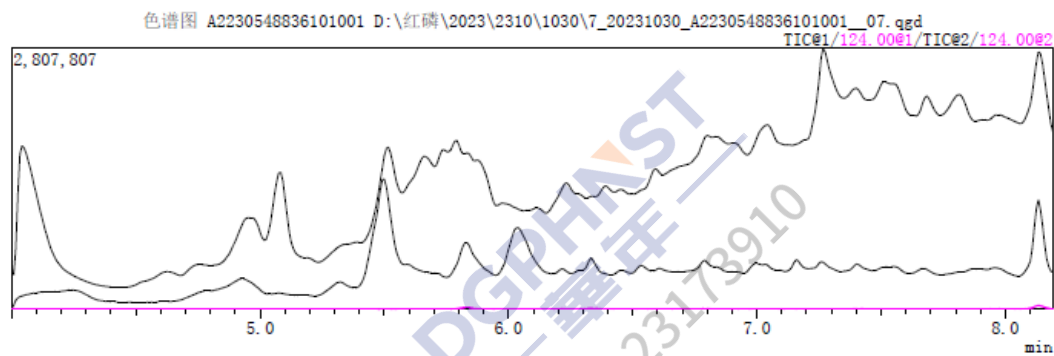


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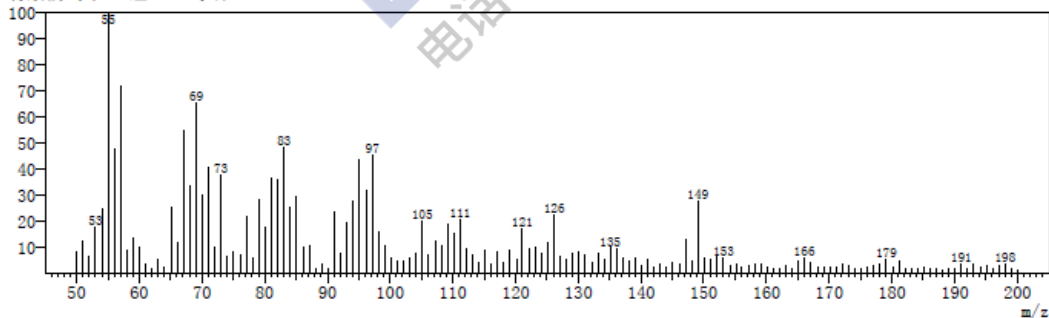
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Red phosphorus Sample Test Spectra



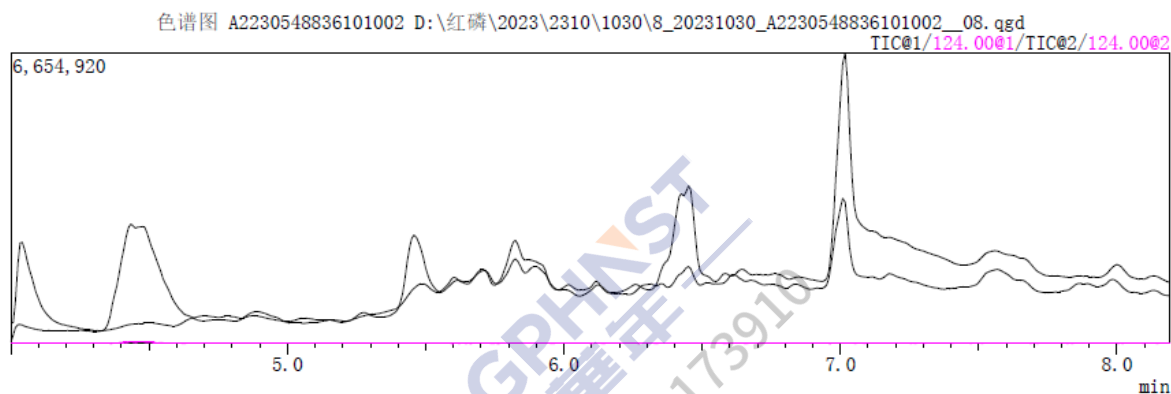
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质量峰:151
原始模式:单个 6.550(613)
背景模式:无 组 1 - 事件 1



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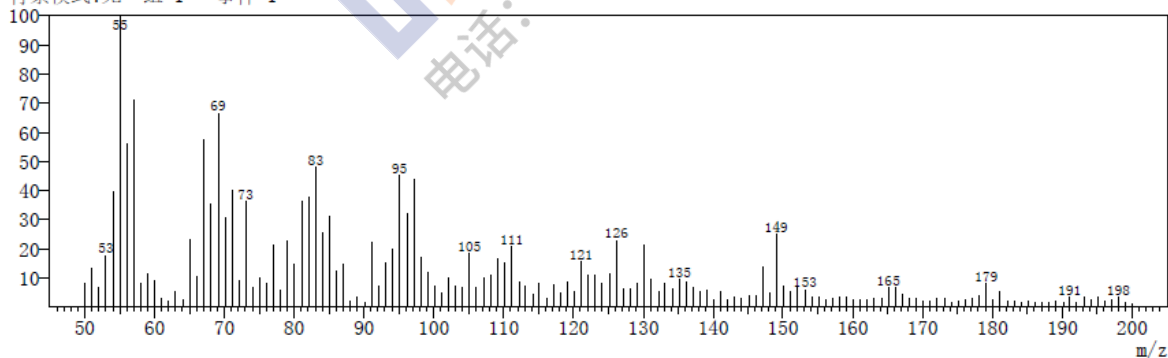


ID#:1 保留时间: N.D. (W/B) (扫描数:613)

质量峰:151

原始模式:单个 6.550(613)

背景模式:无 组 1 - 事件 1

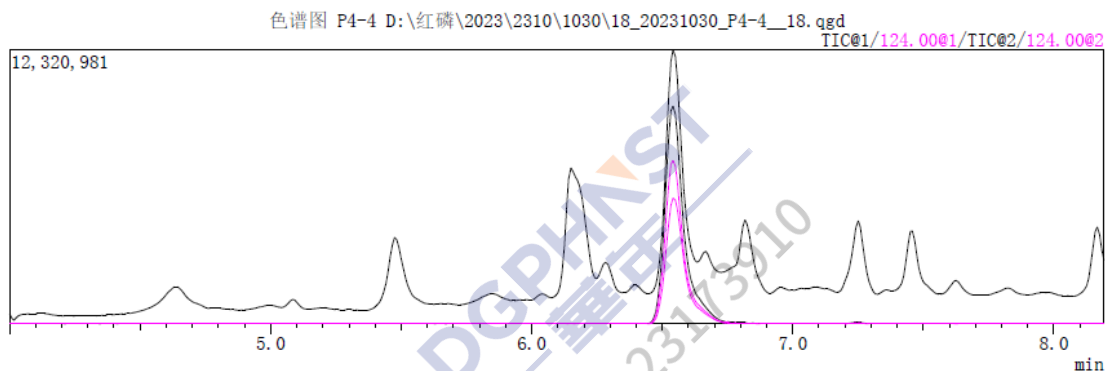


Test Report

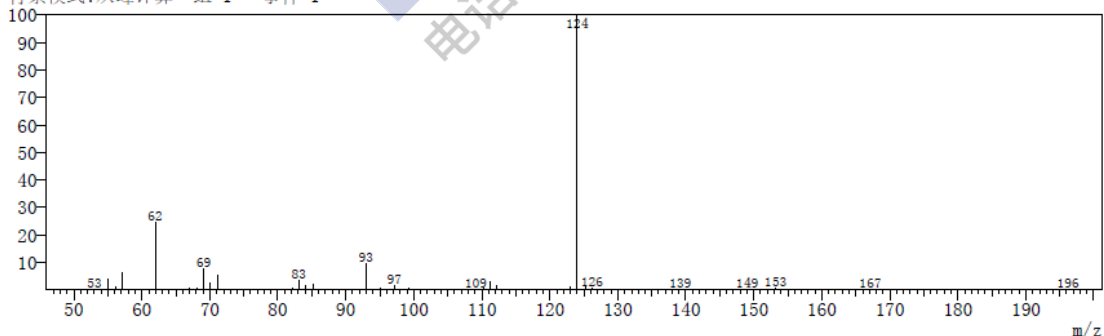
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Standard Material Test Spectra



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质量峰: 54
原始模式: 平均 6.533-6.550 (609-613)
背景模式: 从峰计算 组 1 - 事件 1

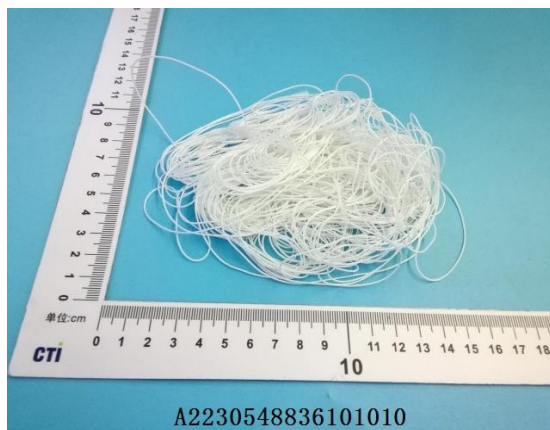
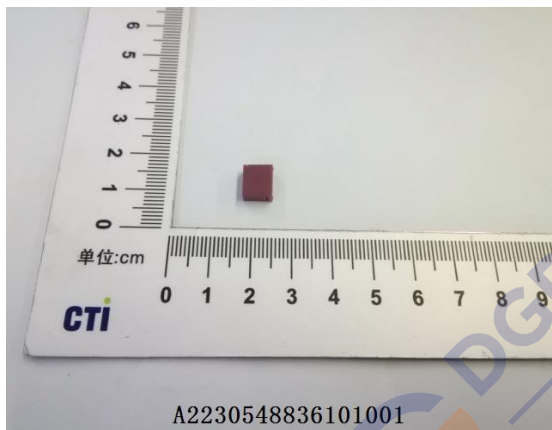


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Photo(s) of the sample(s)



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Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can't be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

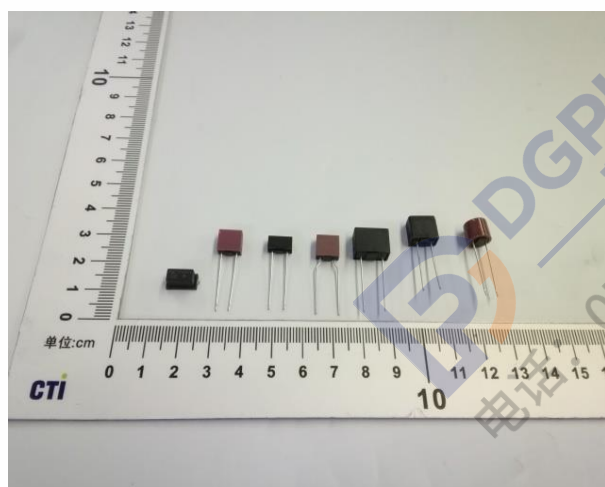
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Appendix

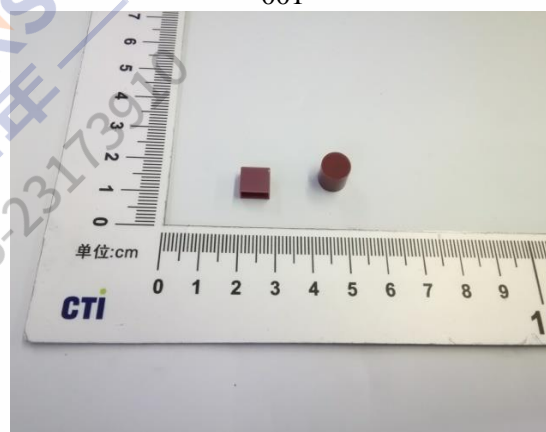
Client Reference Information

CTI Sample ID	Client Reference Information
001	Red shell
002	Black shell
006	Tin-plated bronze wires

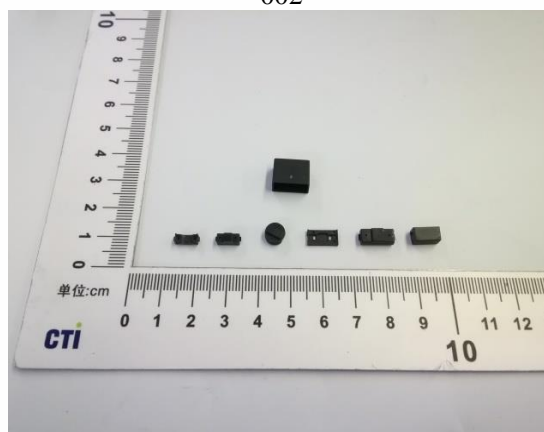
Client Reference Photo (Non-tested sample)



001



002



Statement:

1. The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. The Appendix Information is/are the supplement(s) for the Report A223054883610107.