



Test Report

Report No. A223011264110100101

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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

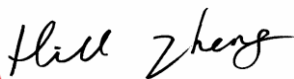
Sample Name Chip Fuse Series (0402FA/1206T/1206F/0603T/0603F/1206HC)
Sample Received Date Mar. 16, 2023
Testing Period Mar. 16, 2023 to Mar. 23, 2023

Test Requested As specified by client, to test Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Dimethyl fumarate (DMF), Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA), Phthalates, Tetrabromobisphenol A (TBBP-A), Middle Chain Chlorinated Paraffins (MCCPs), Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Polycyclic Aromatic Hydrocarbons (PAHs), Red phosphorus in the submitted sample(s).

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



Approved by



Date

Mar. 23, 2023

Hill Zheng

Technical Manager

No. R450143991

Centre Testing International Group Co., Ltd.

CTI Building, Ying Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

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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 62321-7-2:2017 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
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
Dimethyl fumarate (DMF)	Refer to US EPA 3550C:2007 & US EPA 8270E:2018	GC-MS
Perfluorooctane Sulfonates(PFOS)*	Refer to DIN CEN/TS 15968:2010	LC-MS-MS
Perfluorooctanoic Acid(PFOA)*	Refer to DIN CEN/TS 15968:2010	LC-MS-MS
Phthalates	Refer to EN 14372:2004(E)	GC-MS
Polycyclic Aromatic Hydrocarbons (PAHs)	AfPS GS 2019:01 PAK	GC-MS
Middle Chain Chlorinated Paraffins (MCCPs)	Refer to US EPA 3540C:1996 & US EPA 8270E:2018	GC-MS(NCI)
Tetrabromobisphenol A (TBBP-A)	Refer to US EPA 3550C:2007 & US EPA 8270E:2018	GC-MS
Red phosphorus*	Refer to GB/T 9722-2006	PY-GC-MS

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Test Result(s)

Tested Item(s)	Result	MDL
	001	
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

Tested Item(s)	Result	MDL
	001	
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

Tested Item(s)	Result	MDL
	001	
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

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Tested Item(s)	Result	MDL
	001	
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
	001	
Fluorine (F)	N.D.	10 mg/kg
Chlorine (Cl)	N.D.	10 mg/kg
Bromine (Br)	N.D.	10 mg/kg
Iodine (I)	N.D.	10 mg/kg
Total (Cl+Br)	N.D.	/
Tested Item(s)	Result	MDL
	001	
Dimethyl fumarate (DMF)	N.D.	0.1 mg/kg
Tested Item(s)	Result	MDL
	001	
Perfluorooctane Sulfonates (PFOS)*	N.D.	0.010 mg/kg
Tested Item(s)	Result	MDL
	001	
Perfluorooctanoic Acid (PFOA)*	N.D.	0.010 mg/kg
Tested Item(s)	Result	MDL
	001	
Phthalates		
Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	30 mg/kg
Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg

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Tested Item(s)	Result	MDL
	001	
Phthalates		
Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
Dimethyl phthalate (DMP) CAS#:131-11-3*	N.D.	30 mg/kg
Diethyl phthalate (DEP) CAS#:84-66-2*	N.D.	30 mg/kg
Dipropyl phthalate (DPrP) CAS#:131-16-8*	N.D.	30 mg/kg
Dipentyl phthalate (DPP/DPENP) CAS#:131-18-0*	N.D.	30 mg/kg
Diheptyl phthalate (DHP) CAS#:3648-21-3*	N.D.	30 mg/kg
Dicyclohexyl phthalate (DCHP) CAS#:84-61-7*	N.D.	30 mg/kg
Diisooctyl phthalate (DIOP) CAS#:27554-26-3*	N.D.	50 mg/kg
Dinonyl phthalate (DNP) CAS#:84-76-4*	N.D.	30 mg/kg
Diisononyl adipate (DINA) CAS#:33703-08-1*	N.D.	50 mg/kg
Di-n-hexyl phthalate (DNHP/DHEXP) CAS#:84-75-3*	N.D.	30 mg/kg

Tested Item(s)	Result	MDL
	001	
Tetrabromobisphenol A (TBBP-A)	N.D.	5 mg/kg

Tested Item(s)	Result	MDL
	001	
Middle Chain Chlorinated Paraffins (MCCPs)	N.D.	100 mg/kg

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Tested Item(s)	Result	MDL
	001	
Polycyclic Aromatic Hydrocarbons (PAHs)		
Naphthalene	N.D.	0.2 mg/kg
Phenanthrene	N.D.	0.2 mg/kg
Anthracene	N.D.	0.2 mg/kg
Fluoranthene	N.D.	0.2 mg/kg
Pyrene	N.D.	0.2 mg/kg
Chrysene	N.D.	0.2 mg/kg
Benzo(a)anthracene	N.D.	0.2 mg/kg
Benzo(b)fluoranthene	N.D.	0.2 mg/kg
Benzo(k)fluoranthene	N.D.	0.2 mg/kg
Benzo(j)fluoranthene	N.D.	0.2 mg/kg
Benzo(a)pyrene	N.D.	0.2 mg/kg
Benzo(e)pyrene	N.D.	0.2 mg/kg
Dibenzo(a,h)anthracene	N.D.	0.2 mg/kg
Benzo(g,h,i)perylene	N.D.	0.2 mg/kg
Indenol(1,2,3-cd)pyrene	N.D.	0.2 mg/kg
Sum (Phenanthrene, Anthracene, Fluoranthene, Pyrene)	N.D.	/
Sum 15 PAHs	N.D.	/

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Maximum PAHs limits (mg/kg) for the materials with relevant contact/grip and operating surfaces that are to be categorised based on the results of the risk assessment

Parameters	Category 1	Category 2		Category 3	
	Materials intended to be placed in the mouth, or materials in toys according to Directive 2009/48/EC or materials for the use by children up to 3 years of age coming into long-term contact with skin (more than 30s) during the intended use	Materials not covered by category 1, coming into long-term contact (more than 30s) or short-term repetitive contact** with skin during the intended or foreseeable use		Materials not covered by category 1 nor by category 2, coming into short-term contact (up to 30s) with skin during the intended or foreseeable use	
		Use by children (< 14 years) (include both active and passive direct contact)	Other consumer products	Use by children (< 14 years) (include both active and passive direct contact)	Other consumer products
Benzo(a)pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenz(a,h)anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indenol(1,2,3-cd)pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene, Anthracene, Fluoranthene, Pyrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene	< 1	< 2		< 10	
Sum 15 PAHs	< 1	< 5	< 10	< 20	< 50

** Definition “short-term repetitive contact” taken from REACH Annex XVII entry 50 amendment (REGULATION (EU) No.1272/2013)

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Tested Item(s)	Result	MDL
	001	
Red phosphorus*	Negative [#]	500 mg/kg

Sample/Part Description

No.	CTI Sample ID	Description
1	001	White/green solid with black printing and silvery metal(Tested as a whole)

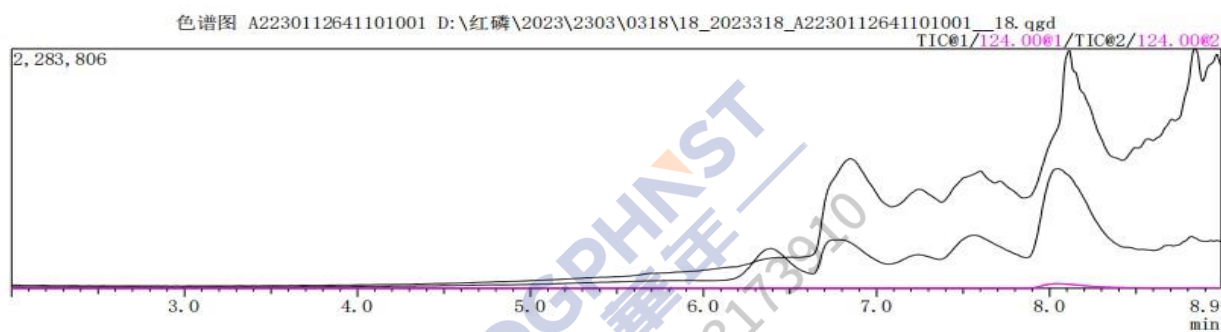
- Remark:**
- The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.
 - The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.
 - MDL = Method Detection Limit
 - N.D. = Not Detected (<MDL)
 - mg/kg = ppm = parts per million
 - Negative = Not Contained
 - The red phosphorus is qualified by PY-GC-MS method which detect pyrolysis products P₄ of red phosphorus. But there is a false positive risk by performing this method, since P₄ could also generate while the phosphate and organic phosphate coexist with some strong oxidizing or reductant agent in pyrolysis process.
 - [#]Result for reference only.
 - Information Statement:Different sample name with different buyer.
 - According to the client's statement, the Company Name shown on Report in this report and the Company Name shown on Report in the report A2230112641101001 are the Group-Branch relations, the test result(s) of this report is/are presented in reference to the result(s) (Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Polycyclic Aromatic Hydrocarbons (PAHs)) that reported in A2230112641101001.
- Note:**
- *Indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.
 - The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.

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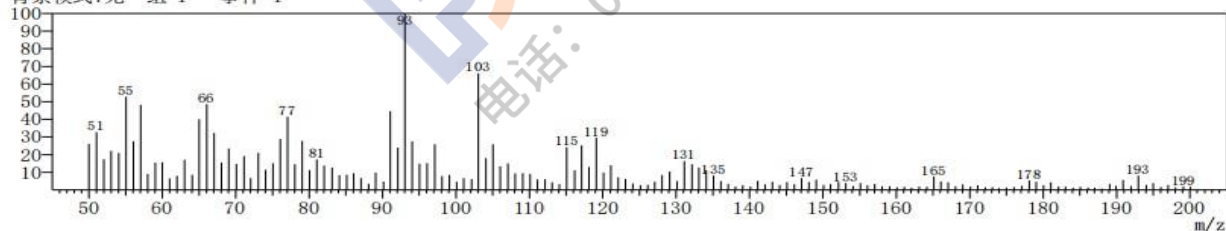
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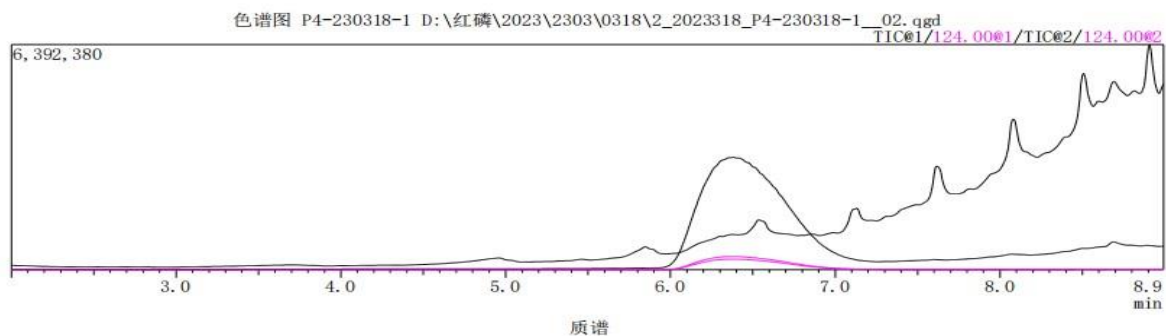
Red phosphorus Sample Test Spectra Sample Test Spectra



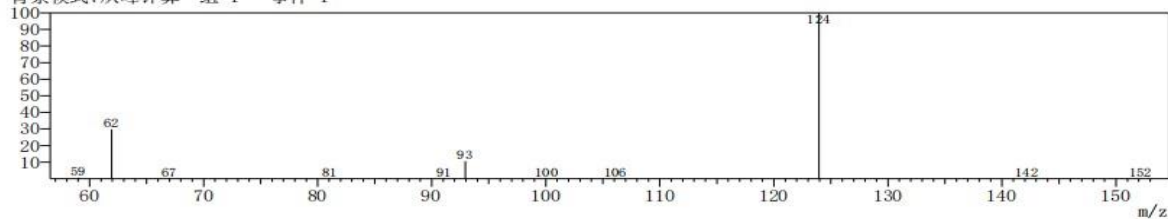
ID#:1 保留时间: N.D. (W/B) (扫描数:1053)
质量峰:151
原始模式:单个 6.383(1053)
背景模式:无 组 1 - 事件 1



Standard Material Test Spectra



ID#:1 保留时间:6.383(扫描数:1053)
质量峰:17
原始模式:平均 6.375-6.392(1051-1055)
背景模式:从峰计算 组 1 - 事件 1



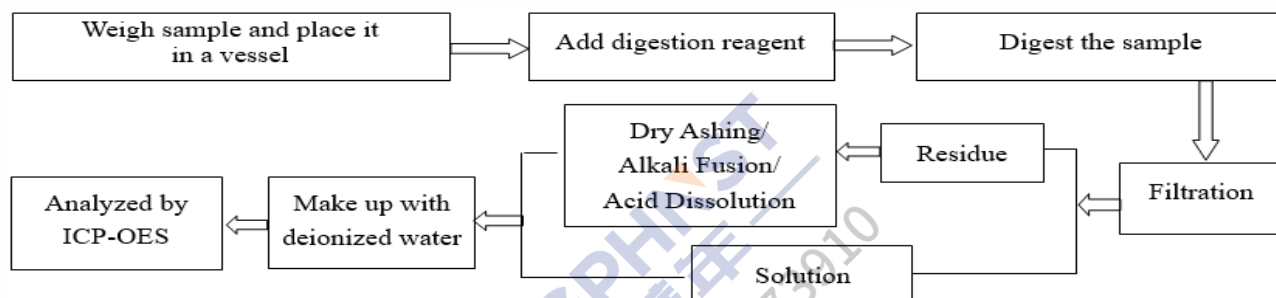
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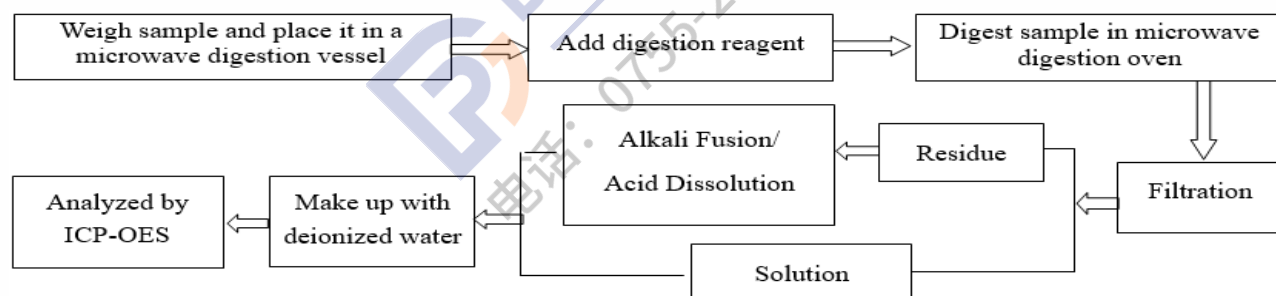
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Test Process

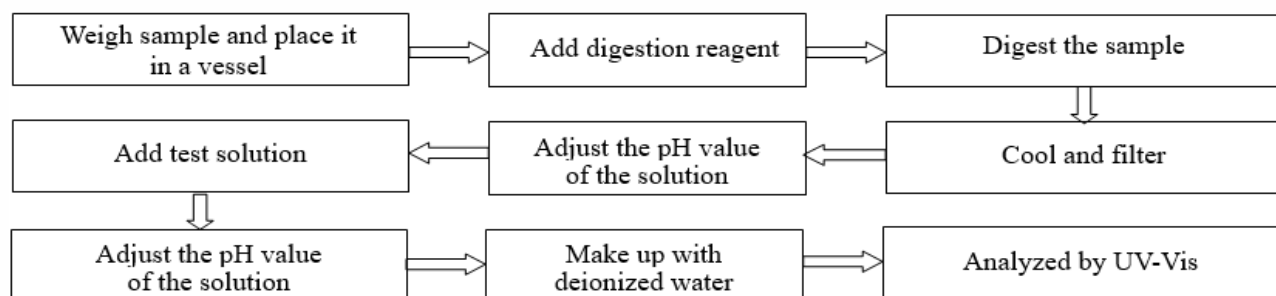
1. Lead (Pb), Cadmium (Cd), Chromium(Cr)



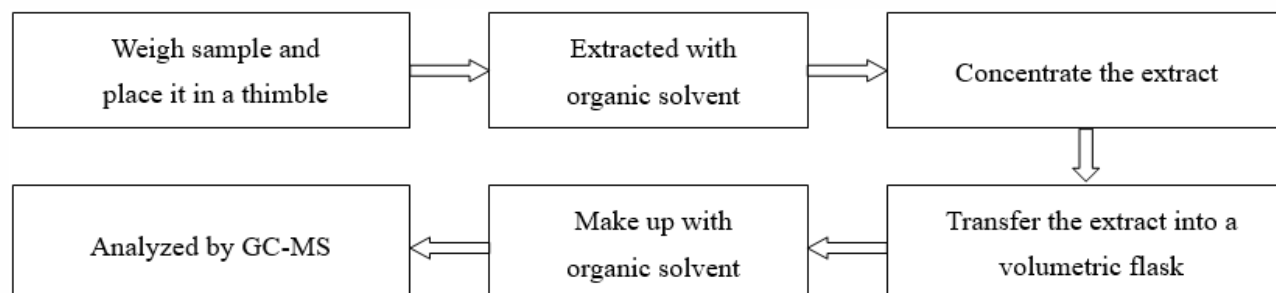
2. Mercury (Hg)



3. Hexavalent Chromium (Cr(VI))



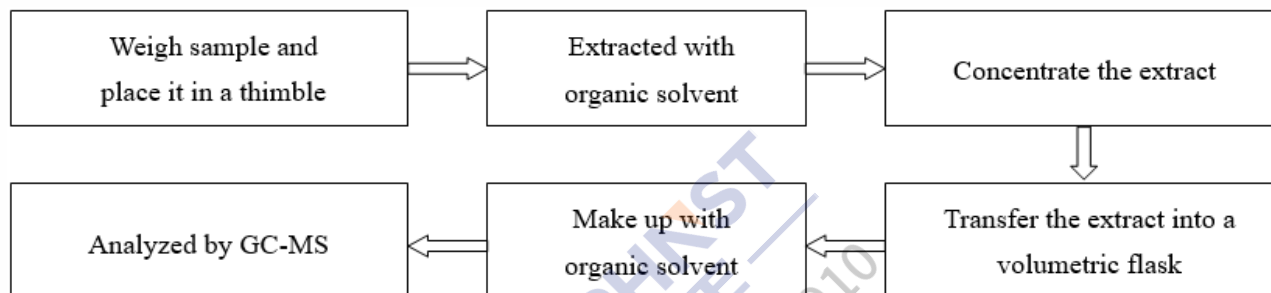
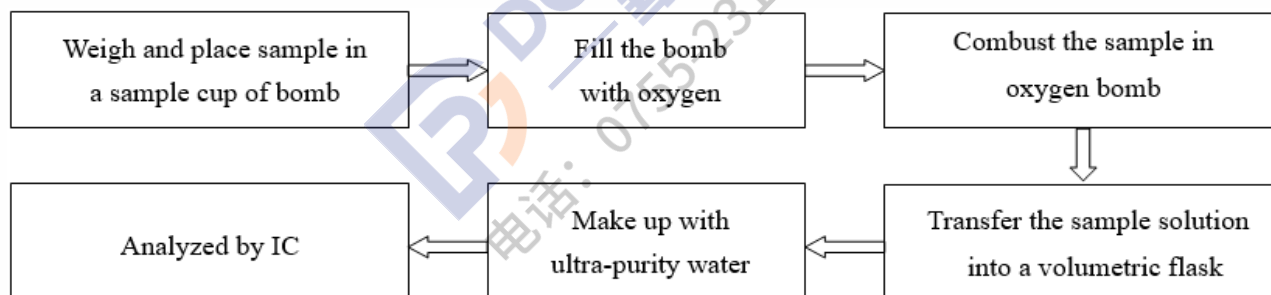
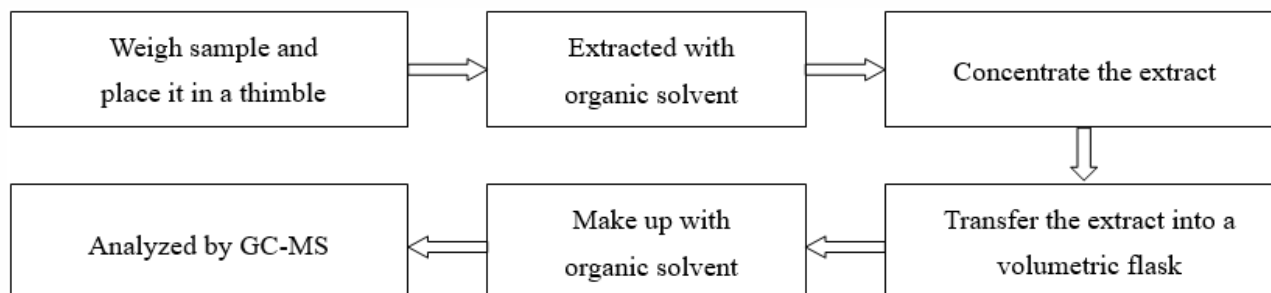
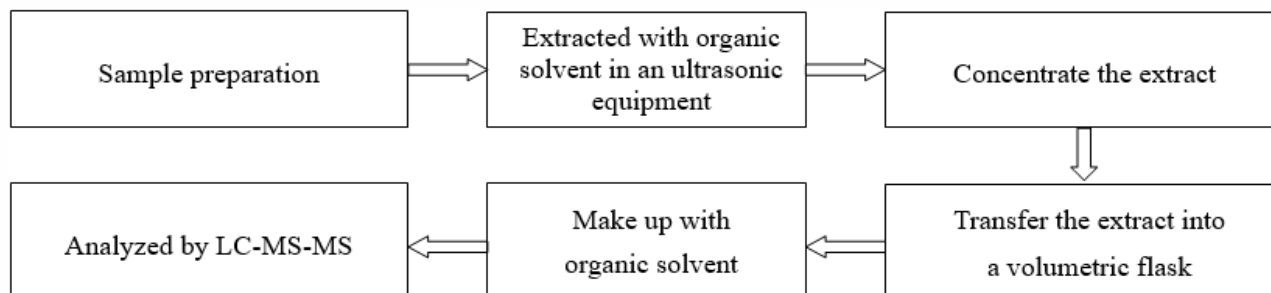
4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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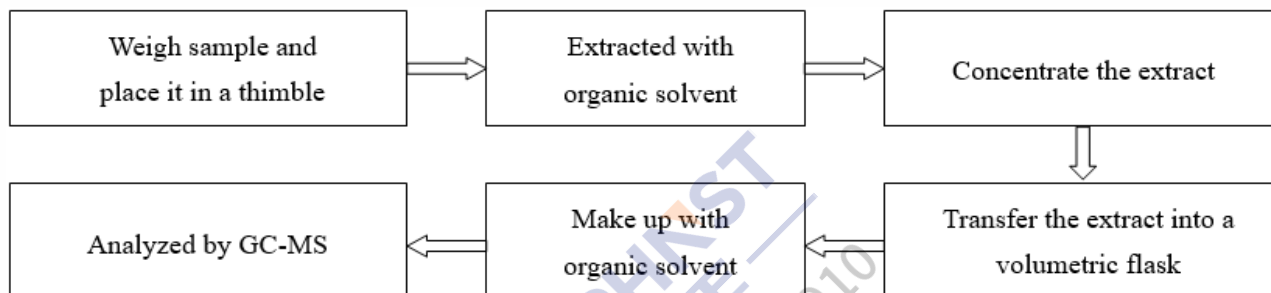
5. Phthalates (DBP, BBP, DEHP, DIBP)**6. Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)****7. Dimethyl fumarate (DMF)****8. Perfluorooctane Sulfonates(PFOS), Perfluorooctanoic Acid(PFOA)**

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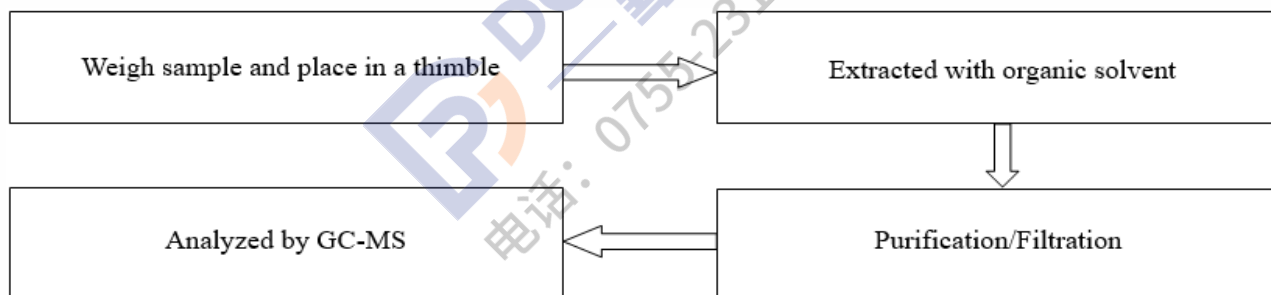
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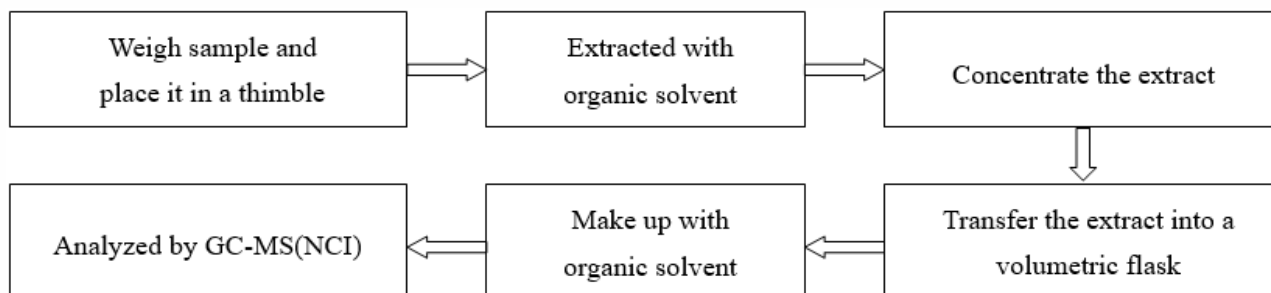
9. Phthalates



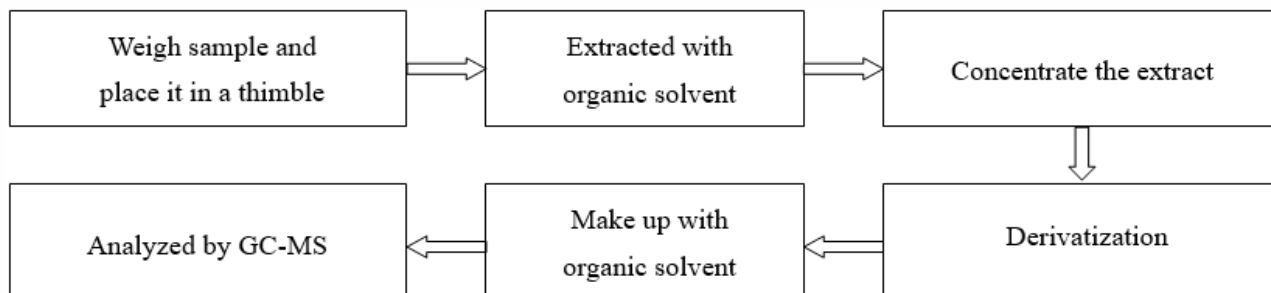
10. Polycyclic Aromatic Hydrocarbons (PAHs)



11. Middle Chain Chlorinated Paraffins (MCCPs)



12. Tetrabromobisphenol A (TBBP-A)

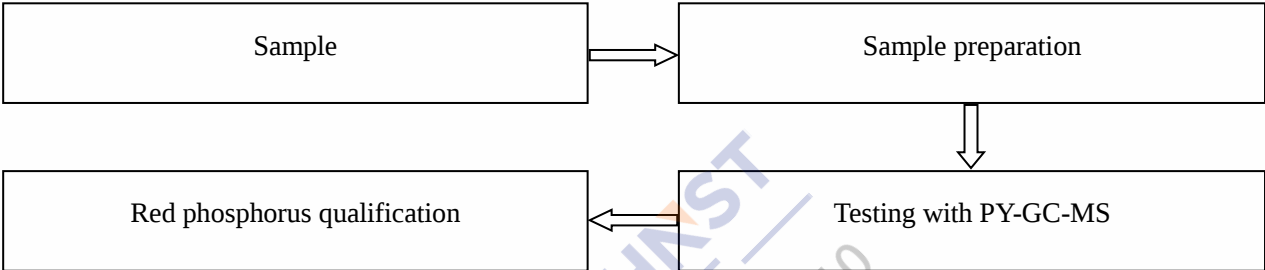


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13. Red phosphorus



DGPHKST
— 華年 —
电话: 0755-23173910

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Photo(s) of the sample(s)



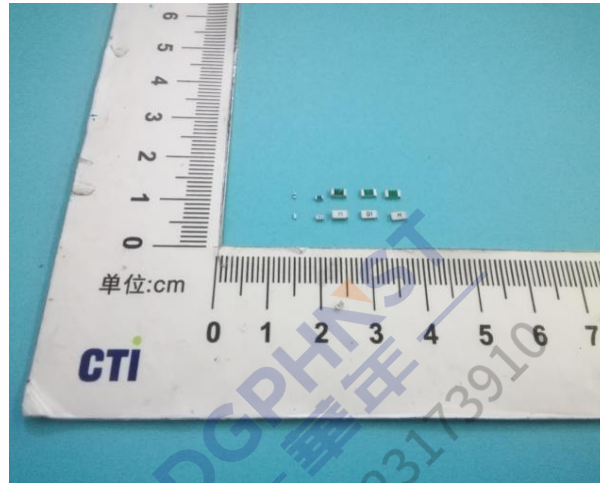
Statement:

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.

*** End of Report ***

Appendix

Client Reference Photo (Non-tested sample)



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 A223011264110100101.