AfPS (German commission for Product Safety) : GS PAHs requirements

Parameter	Category 1	Category 2		Category 3	
	Materials, that are destined in mouth closed or material in toys according to Directive 2009/48 EC or materials in articles for use by children up to 3 years with longer term according to skin contact (longer than 30s) at intended use	Materials not covered in category 1, with foreseeable contact to skin longer than 30 seconds (long-term skin contact) or repeated short term skin contact at intended or foreseeable use		Materials that do not fall in category 1 or 2, with foreseeable contact to skin up to 30 seconds (short-term skin contact) at intended or foreseeable use	
		Used by Children (<14 years)	Other Consumer Products	Used by Children (<14 years)	Other Consumer Products
Benzo(a)pyrene (BaP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene (BeP) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene (BaA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene (BbF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene (BjF) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene (BkF)mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene (CHR) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene (DBA) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene (BPE) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(1,2,3-cd)pyrene (IPY) mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Phenanthrene (PHE), pyrene (PYR), anthracene (ANT), fluoranthene (FLT), mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene (NAP) mg/kg	< 1	< 2		< 10	
Sum of 15 PAHs	<1	< 5	< 10	< 20	< 50

Phthalates

Test Method : With reference to EN14372: 2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	*001*
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0/68515-49-1	%	0.01	ND
Diisononyl Phthalate (DINP)	28553-12-0/68515-48-0	%	0.01	ND

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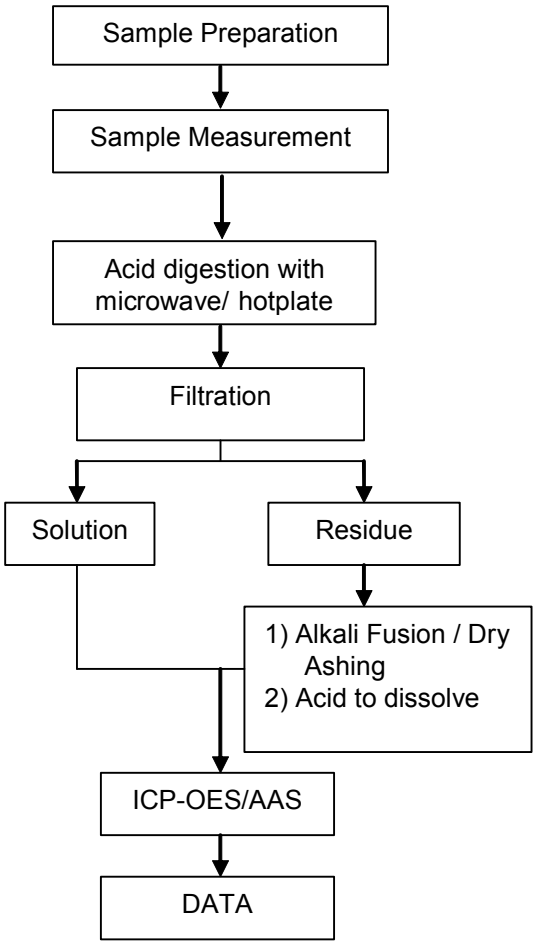
ATTACHMENTS

Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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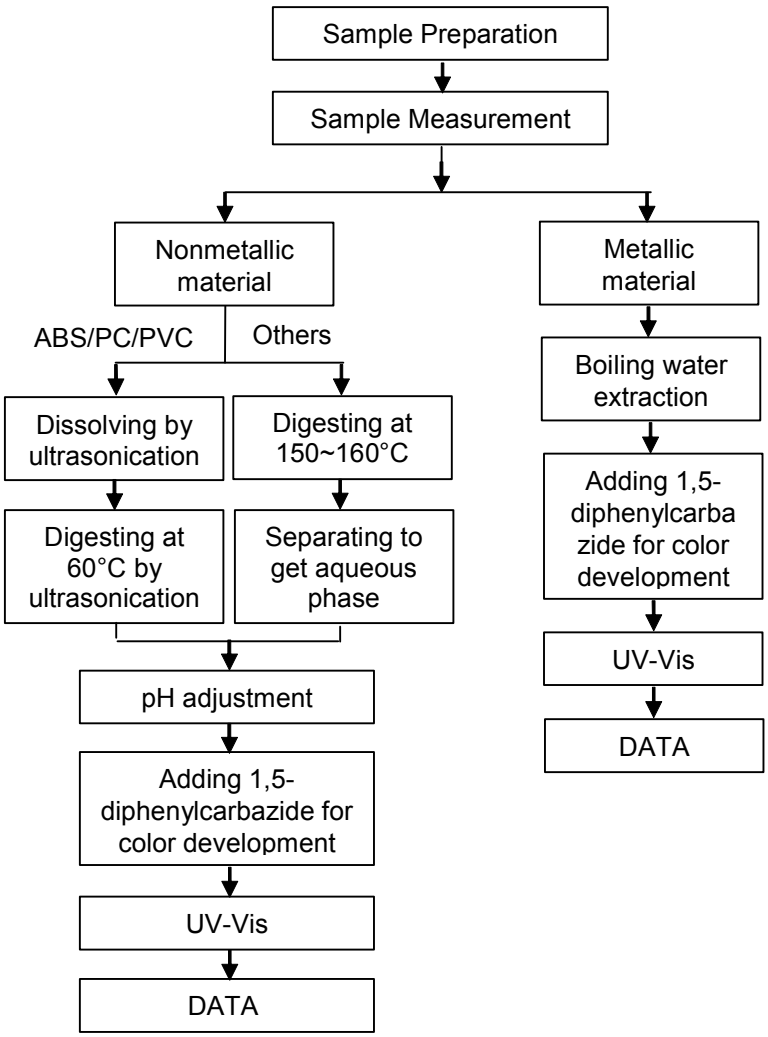
ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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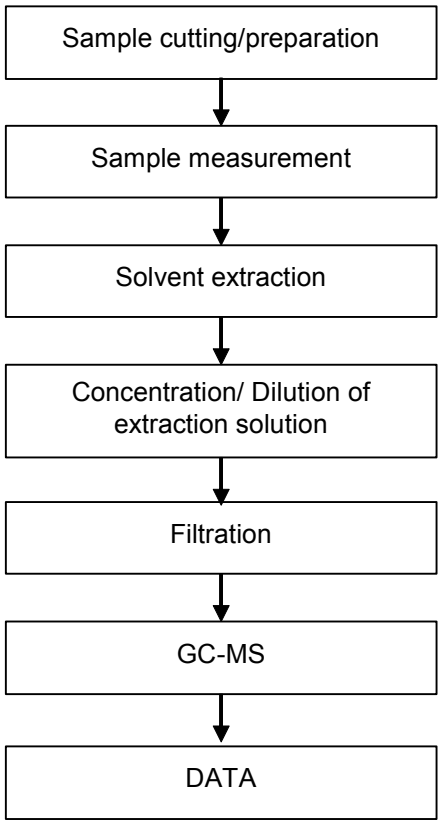
ATTACHMENTS

PBBs/PBDEs Testing Flow Chart



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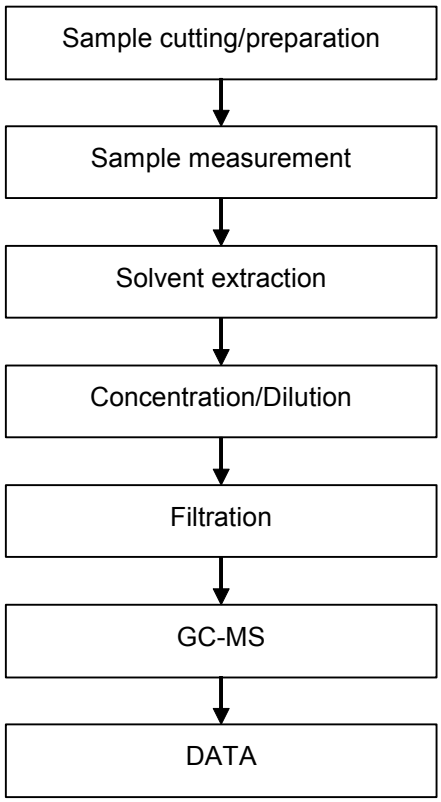
ATTACHMENTS

Phthalates Testing Flow Chart



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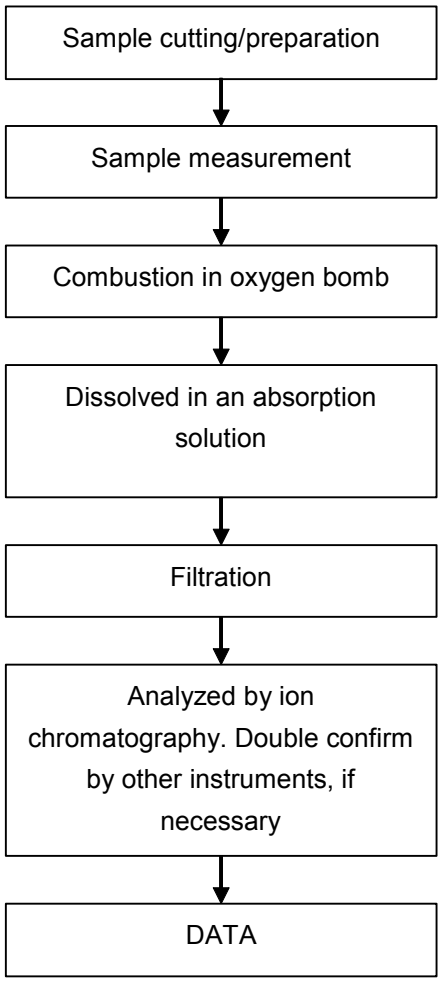
ATTACHMENTS

Halogen Testing (oxygen bomb) Flow Chart



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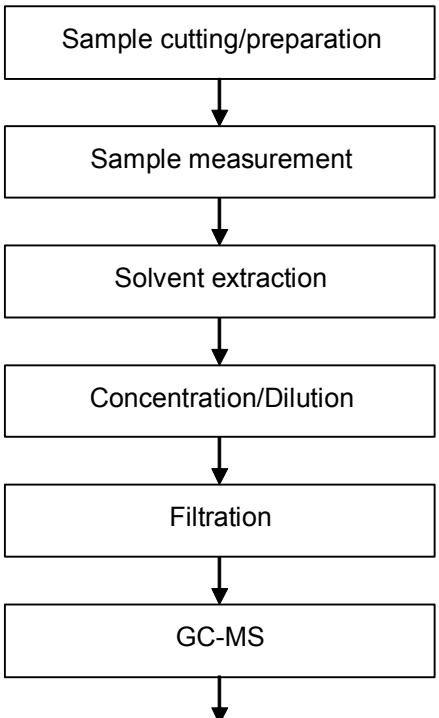
PAHs Testing Flow Chart



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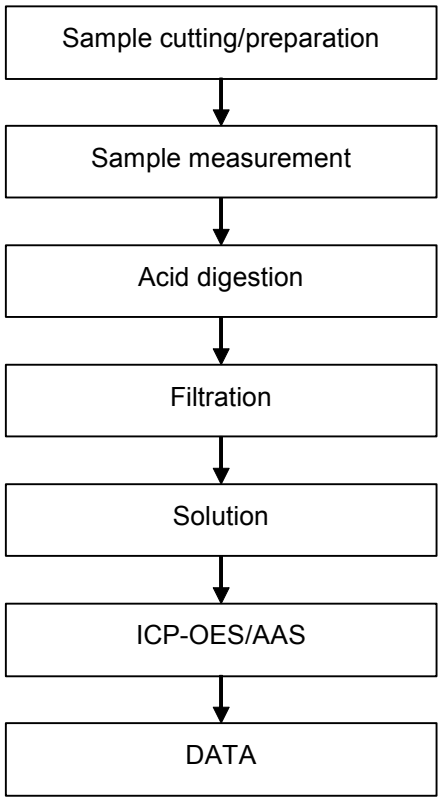
Elements Testing Flow Chart



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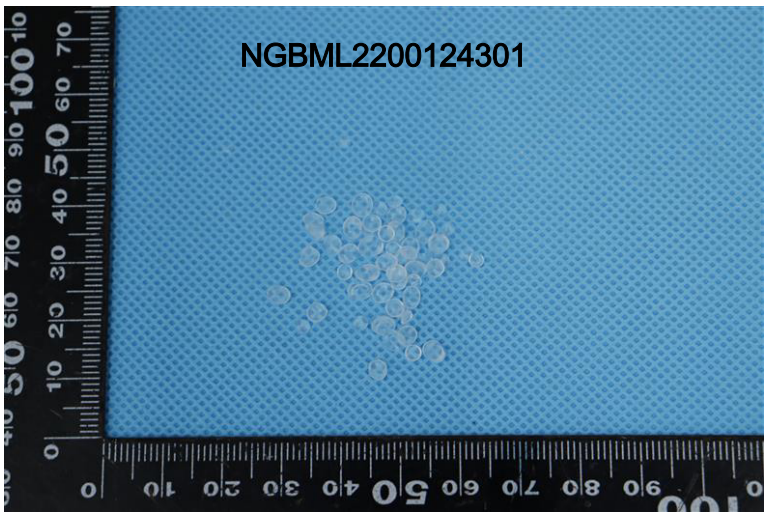
Sample photo:



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SGS authenticate the photo on original report only

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Test Report

DAINICHISEIKA COLOR & CHEMICALS MFG. CO., LTD.

7-6, BAKUROCHO 1-CHOME, NIHONBASHI
CHUO-KU
TOKYO 103-8383
JAPAN

The following sample(s) was/were submitted and identified on behalf of the clients as : FCM H 1372 BLACK

SGS Job No. :	4834626 - HK
Lot No. :	16212112
Country of Origin :	JAPAN
Date of Sample Received :	31 May 2021
Testing Period :	31 May 2021 - 11 Jun 2021
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU. Based on the performed tests on submitted samples, the test results do not exceed the limit as set by the requirement of European Regulation POPs (EU) 2019/1021–Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD). Based on the performed tests on submitted sample(s), the test results do not exceed the limit as set by European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives.

Signed for and on behalf of
SGS Hong Kong Limited.

Wong Ka Ming, Polly
Chemist

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
1	HKT21-025117.009	Black plastic pellet

Remarks :

(1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC62321-4:2013+A1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, Hg analyzer, UV-Vis and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

Test Item(s)	Limit	Unit	MDL	*009*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	ND
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND

Test Item(s)	Limit	Unit	MDL	*009*
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1,000	mg/kg	50	ND
Benzylbutyl Phthalate (BBP)	1,000	mg/kg	50	ND
Bis-(2-ethylhexyl) Phthalate (DEHP)	1,000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1,000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

Halogen

Test Method : With reference to EN 14582:2016, analysis was performed by IC.

Test Item(s)	Limit	Unit	MDL	*009*
Fluorine (F)	-	mg/kg	50	270000
Chlorine (Cl)	-	mg/kg	50	ND
Bromine (Br)	-	mg/kg	50	ND
Iodine (I)	-	mg/kg	50	ND

Notes :

(1) The measurement report of the expanded uncertainty with confident level 95% by coverage factor k=2, is 20% for each analyte of Fluorine, Chlorine, Bromine and Iodine.

European Regulation POPs (EU) 2019/1021 – Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)

Test Method : With reference to SGS inhouse method-CTS-SL-235-1, analysis was performed by GC-MS.
(Decision Rule: please refer to appendix 1: Category 1)

Test Item(s)	Limit	Unit	MDL	009
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)	100	mg/kg	10	ND
Conclusion				**PASS**

European Regulation POPs (EU) 2020/784 amending to Regulation (EU) 2019/1021 - PFOA and its salts, PFOA-Related Substances , PFOS and its derivatives

Test Method : With reference to CEN/TS15968:2010, analysis was performed by LC-MS or LC-MS/MS and GC-MS. (Decision Rule: please refer to appendix 1: Category 1)

Test Item(s)	CAS NO	Limit	Unit	MDL	009
Perfluorooctanoic acid (PFOA) and its salts+	--	0.025	mg/kg	0.010	ND
PFOA-related substances	--	1	mg/kg	-	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTS)	39108-34-4	-	mg/kg	1	ND
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	-	mg/kg	1	ND
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	-	mg/kg	1	ND
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	-	mg/kg	1	ND
Perfluoro-1-iodooctane (PFOI)	507-63-1	-	mg/kg	1	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	--	1,000	mg/kg	-	ND
Perfluorooctane sulfonates (PFOS)^	1763-23-1	-	mg/kg	1	ND
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	-	mg/kg	1	ND
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	-	mg/kg	1	ND
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE)	1691-99-2	-	mg/kg	1	ND
2-(N-methylperfluoro-1-octanesulfonamido) -ethanol (MeFOSE)	24448-09-7	-	mg/kg	1	ND
Perfluorooctane sulfonamide (PFOSA)	754-91-6	-	mg/kg	1	ND
Conclusion					**PASS**

Notes :

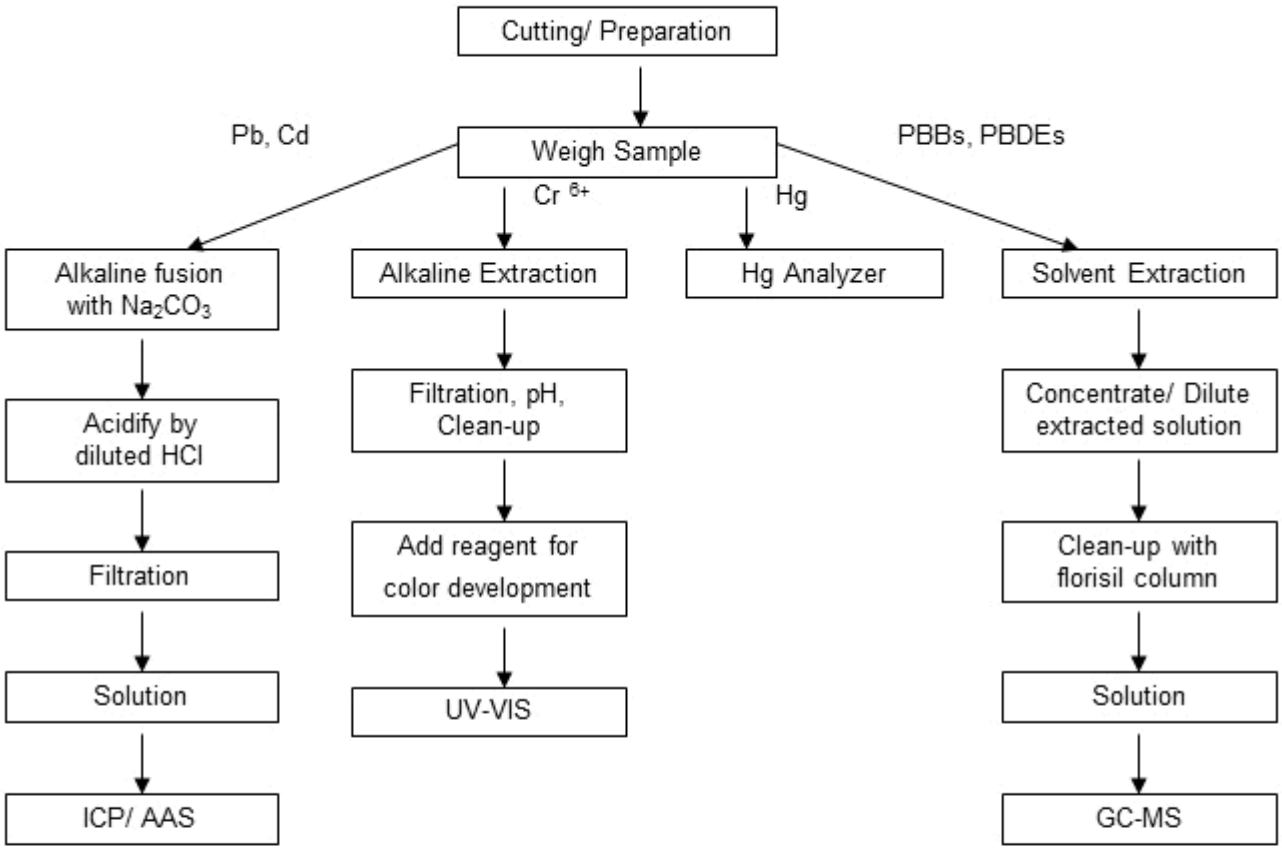
(1) + PFOA refer to its salts including PFOA-Na (CAS No.: 335-95-5), PFOA-K (CAS No.: 2395-00-8),

PFOA-Ag (CAS No.: 335-93-3), PFOA-F (CAS No.: 335-66-0) and APFO (CAS No.: 3825-26-1);
(2) ^ PFOS refer to its derivatives including PFOS-K (CAS No.: 2795-39-3), PFOS-Li (CAS No.: 29457-72-5), PFOS-NH4 (CAS No.: 29081-56-9), PFOS-NH(OH)2 (CAS No.: 70225-14-8), PFOS-N(C2H5)4 (CAS No.: 56773-42-3), PFOS-DDA(CAS No.:251099-16-8) and POSF (CAS No.: 307-35-7)

Appendix 1

Category	Decision Rule Statement
1	The decision rule for conformity reporting is based on the non-binary statement with guard band (is equal to the expanded measurement uncertainty with a 95% coverage probability, w = U95) in ILAC-G8:09/2019 Clause 4.2.3. A. "Pass - the measured value is within (or below / above) the acceptance limit, where the acceptance limit is below / above to the guard band." or "Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk is up to 2.5%.". B. "Conditional Pass - The measured values were observed in tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values exceeded / out of tolerance. When the measured result is close to the tolerance, the specific false accept risk is up to 50%.". C. "Conditional Fail - One or more measured values were observed out of tolerance at the points tested. However, a portion of the expanded measurement uncertainty intervals about one or more measured values were in tolerance. When the measured result is close to the tolerance, the specific false reject risk is up to 50%.". D. "Fail - the measured value is out of (or below / above) the tolerance limit added / subtracted to the guard band." or "Fail - One or more measured values were observed out of tolerance at the points tested". The specific false reject risk is up to 2.5%.
2	The decision rule for conformity reporting is based on BS EN 1811:2011+A1:2015: Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin in Section 9.2 interpretation of results.
3	The decision rule for conformity reporting is based on the general consideration of simple acceptance as stated in ISO/IEC Guide 98-3: "Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM 1995)", and more specifically for analytical measurements to the EURACHEM/CITAC Guide 2012 "Quantifying Uncertainty in Analytical Measurement ".
4	The decision rule for conformity reporting is according to the IEC 62321-7-1 Edition 1.0 2015-09 Section 7: Table 1-(comparison to standard and interpretation of result)
5	The decision rule for conformity reporting is according to the IEC 62321-3-1 Edition 1.0 2013-06 Annex A.3 interpretation of result.
6	The decision rule for conformity reporting is according to the GB/T 26125-2011 Annex A to H
7	The decision rule for conformity reporting is according to the requested specification or standard (ASTM F963-17 section 4.3.5)
8	The decision rule for conformity reporting is according to the requested specification or standard (AS/NZS ISO 8124 Part 3 section 4.2)
Remark	If the decision rule is not feasible to be used and the uncertainty of the result is able to be provided, the uncertainty range of the result will be shown in the report. Otherwise, only result will be shown in the report.

Flowchart:



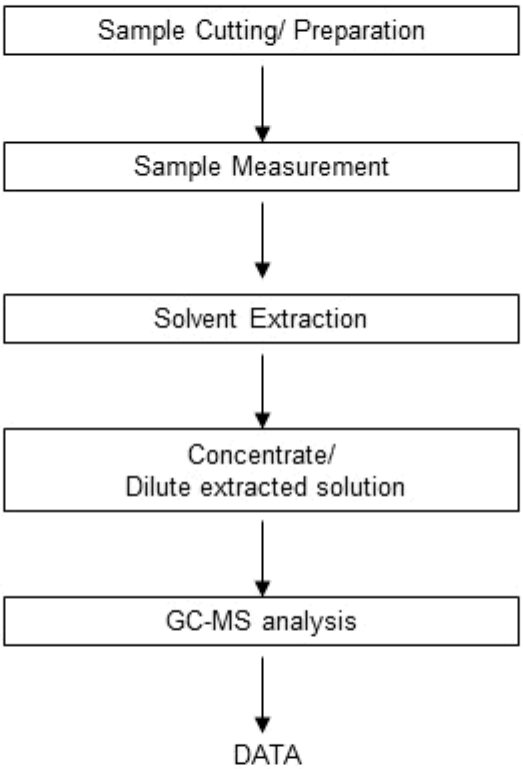
Note : 1) The polymeric samples were dissolved totally by pre-conditioning method according to above flow chat for Cd and Pb contents analysis

Operator : Chiu Kan Yuen (Alkaline Fusion)
Alex Yip (Hg Analyzer)
Nick Liu (Hexavalent Chromium)
Kent Wan (PBBs and PBDEs)

Section Chief : Chan Chun Kit (Dickson Chan)

Flowchart for Phthalates measurement

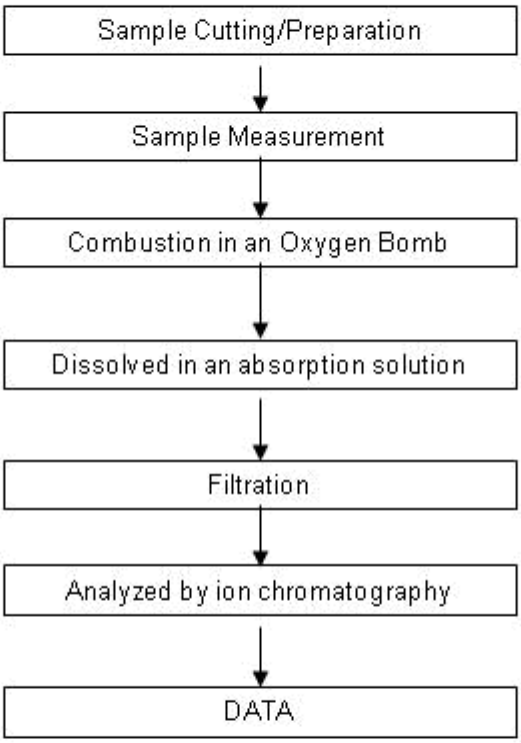
Method: IEC 62321-8:2017



Tested by : Lumpy Lee
Checked by : Edmund Kwan

Flowchart for Halogen Free Test

Method: BS EN14582:2016

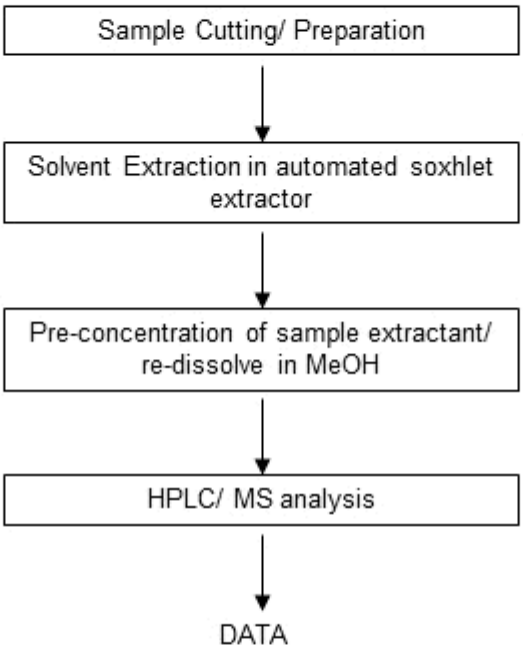


Operator: Tang Ying Sam

Supervisor: Chan Chun Kit (Dickson)

Flowchart for PFOS/ PFOA measurement

Method: CEN/TS15968:2010

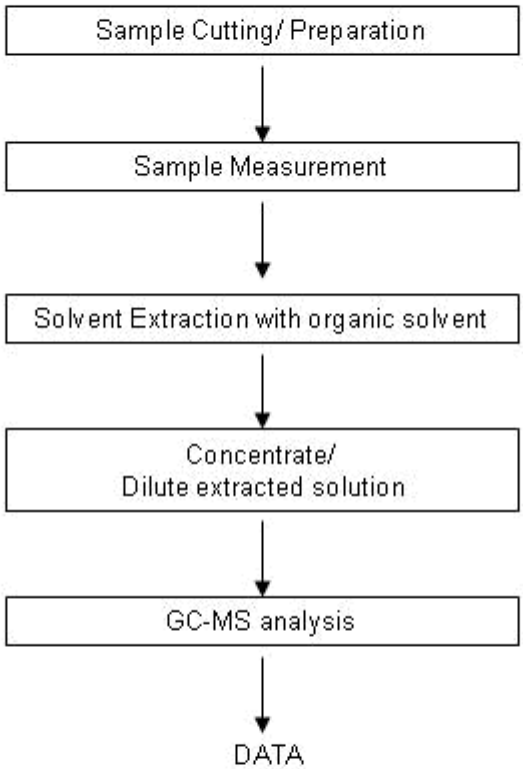


Operator : Candy Luk

Chief Supervisor : Yu Ka Lai

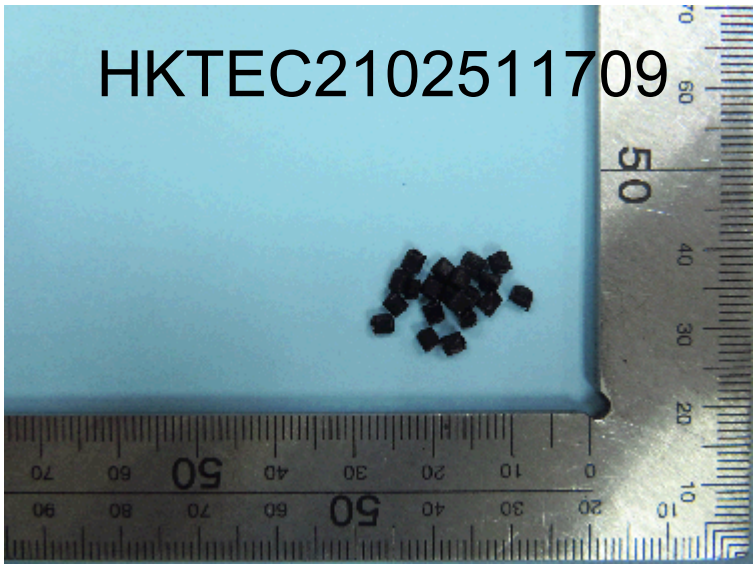
Flowchart for HBCDD measurement

Method: In-house Method



Tested by : Tang Sze Hon, Gary
Checked by : Fok Chi Shan

Sample photo:



HKT21-025117.009

SGS authenticate the photo on original report only

*** End of Report ***

CTI 华测检测

210900341277

Test Report

中国认可
国际互认
检测
TESTING
CNAS L5541

Report No. A2210461380101001

Company Name shown on Report	BAOTOUZHENXIONGCOPPER CO.,LTD
Address	NNER MONGOLIA BAOTOU RARE EARTH HIGH-TECH INDUSTROAL PARK OF HOPE

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

Sample Name	TIN PLATING ROUND COPPER WIRE
Sample Received Date	Nov. 5, 2021
Testing Period	Nov. 5, 2021 to Nov. 10, 2021
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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) in the submitted sample(s).
Test Method	Please refer to the following page(s).
Test Result(s)	Please refer to the following page(s).

****

Conclusion

Tested Sample	According to standard/directive	Result
Submitted Sample	RoHS Directive 2011/65/EU with amendment (EU) 2015/863	PASS

****

PASS means that the results shown on the report comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.

Tested by: Li zheng Su

Approved by: Chen kaimin

Chen kaimin
Lab Manager

Reviewed by: Wendy Gang

Date: Nov. 10, 2021

No. T172794287

Test Report

Report No. A2210461380101001

Test Method

Test 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
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

Test Report

Report No. A2210461380101001

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Lead(Pb)	N.D.	2 mg/kg	1000 mg/kg
Cadmium(Cd)	N.D.	2 mg/kg	100 mg/kg
Mercury(Hg)	N.D.	2 mg/kg	1000 mg/kg
Hexavalent Chromium(Cr(VI))	N.D. ▼	0.10 μg/cm² (LOQ)	1000 mg/kg
Tested Item(s)	**Result**	**MDL**	**Limit**
Polybrominated Biphenyls (PBBs)			
Monobromobiphenyl	N.D.	5 mg/kg	1000 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**	**Limit**
Polybrominated Diphenyl Ethers (PBDEs)			
Monobromodiphenyl ether	N.D.	5 mg/kg	1000 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	

Test Report

Report No. A2210461380101001

Test Result(s)

Tested Item(s)	Result	MDL	Limit
Phthalates (DBP, BBP, DEHP, DIBP)			
Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg	1000 mg/kg
Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg	1000 mg/kg
Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg	1000 mg/kg
Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg	1000 mg/kg

Tested Item(s)	Result	MDL
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

Sample/Part Description Metal wire with silvery plating

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-1000 mg/kg = 0.1%

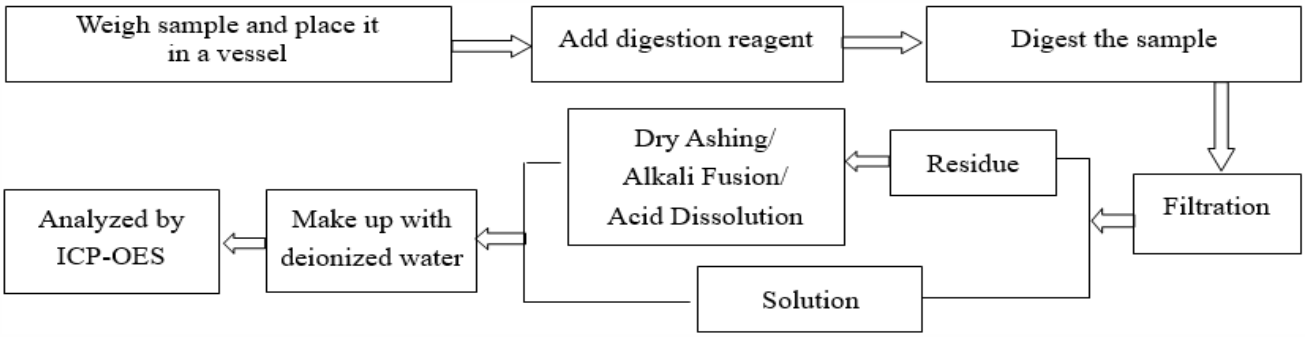
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm²

-▼The sample is negative for Cr(VI) − The Cr(VI) concentration is below 0.10 µg/cm². The coating is considered a non-Cr(VI) based coating.

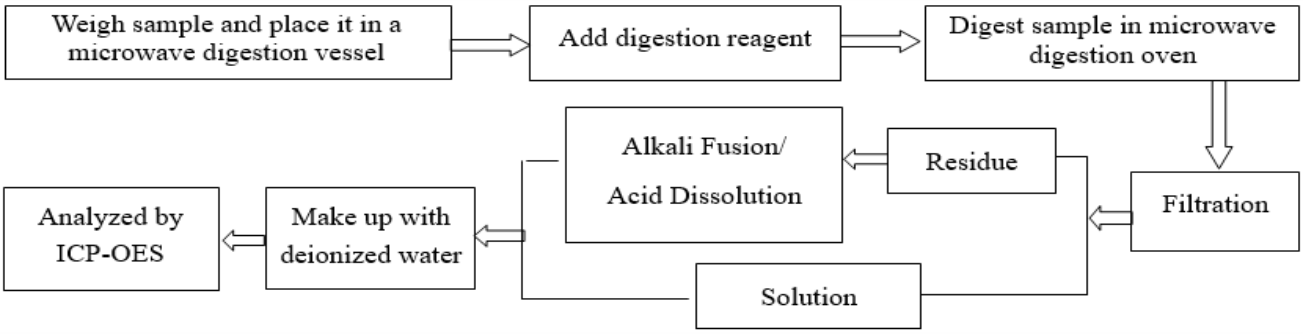
Test Report

Test Process

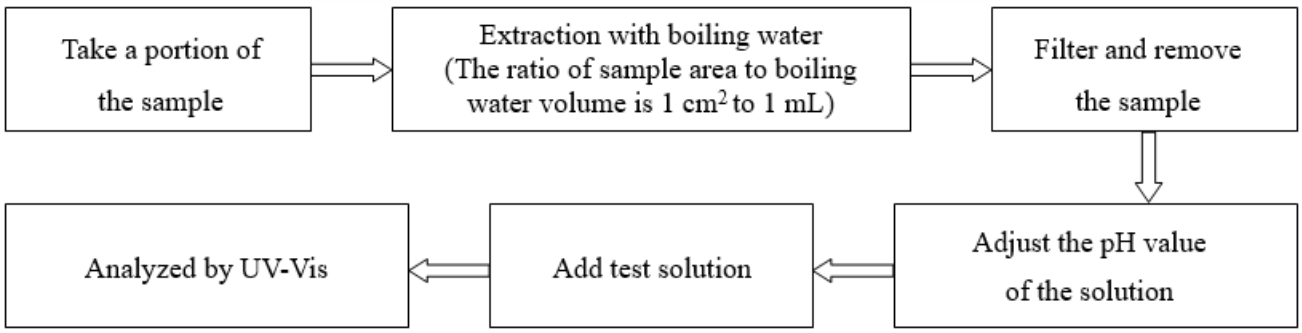
1. Lead (Pb), Cadmium (Cd)



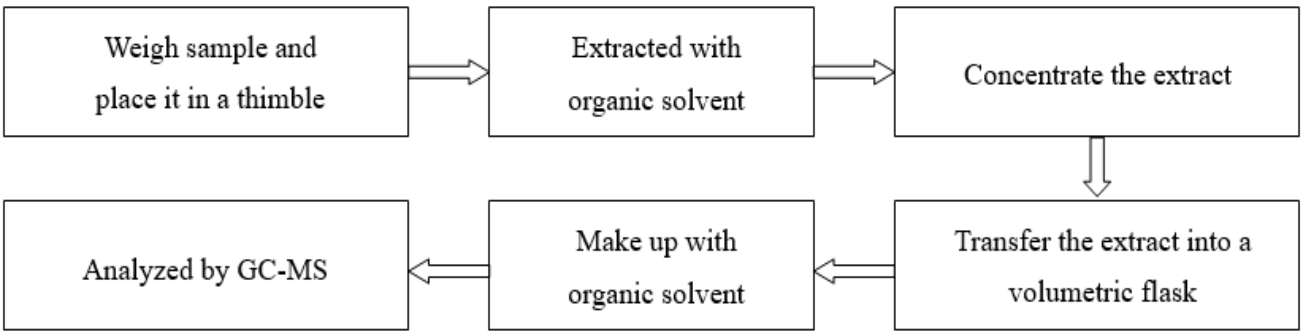
2. Mercury (Hg)



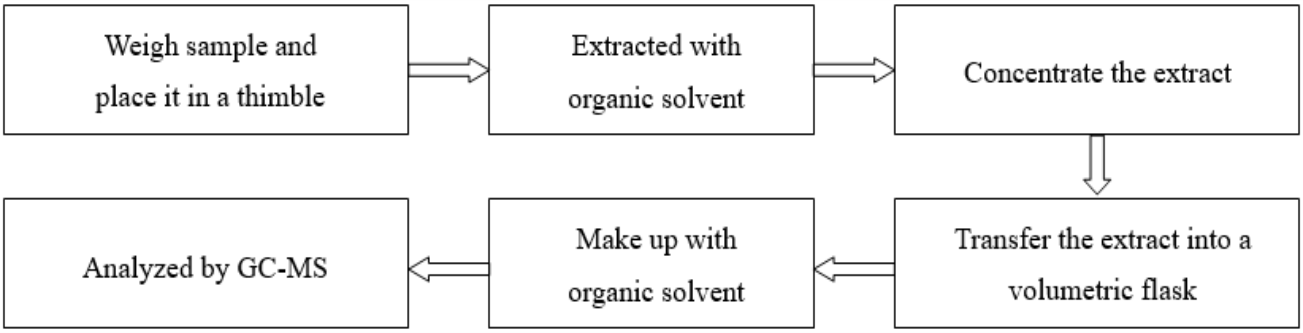
3. Hexavalent Chromium (Cr(VI))



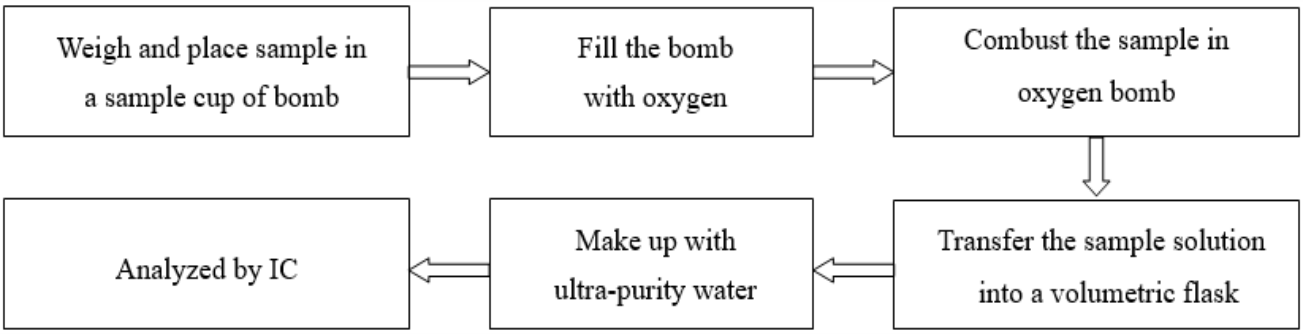
4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



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



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



Test Report

Report No. A2210461380101001

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 ***

CTI 华测检测

180000343904

检测报告

Test Report

报告编号 A2210437437101005E
Report No. A2210437437101005E

报告抬头公司名称 东莞市煜春塑料科技有限公司
Company Name shown on Report DONG GUAN YU CHUN PLASTICS TECHNOLOGY CO;LTD
地 址 东莞市常平镇桥沥村北门工业区190号
Address BEIMEN VILLAGE INDUSTRIAL , QIAOLI ,CHANGPING TOWN,DONGGUAN

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称	FR8330A
Sample Name	FR8330A
材料名称	PBTGF+15%VO.BK/PBTGF+30%VO.BK
Material	PBTGF+15%VO.BK/PBTGF+30%VO.BK
样品接收日期	2021.10.22
Sample Received Date	Oct. 22, 2021
样品检测日期	2021.10.22-2021.10.26
Testing Period	Oct. 22, 2021 to Oct. 26, 2021

检测要求 根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)进行测试。
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) in the submitted sample(s).

检测依据/检测结果 请参见下页。
Test Method/Test Result(s) Please refer to the following page(s).

主 检
Tested by

批 准
Approved by
郑晴涛
技术经理 Technical Manager

审 核
Reviewed by

日 期
Date
2021.10.26

No. R158921589

检测检测认证集团股份有限公司
Centre Testing International Group Co.,Ltd.
广东省深圳市宝安区新安街道兴东社区华测检测大楼
CTI Building, Xing Dong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, Guangdong Province, P.R. China

检测报告
Test Report

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017和/或IEC 62321-5:2013测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

样品/部位描述 黑色塑料颗粒
Sample/Part Description Black plastic grains

备注: **对于检测铅，镉，汞之样品已完全溶解。**
-N.D. = 未检出（小于方法检出限）
-mg/kg = ppm = 百万分之一

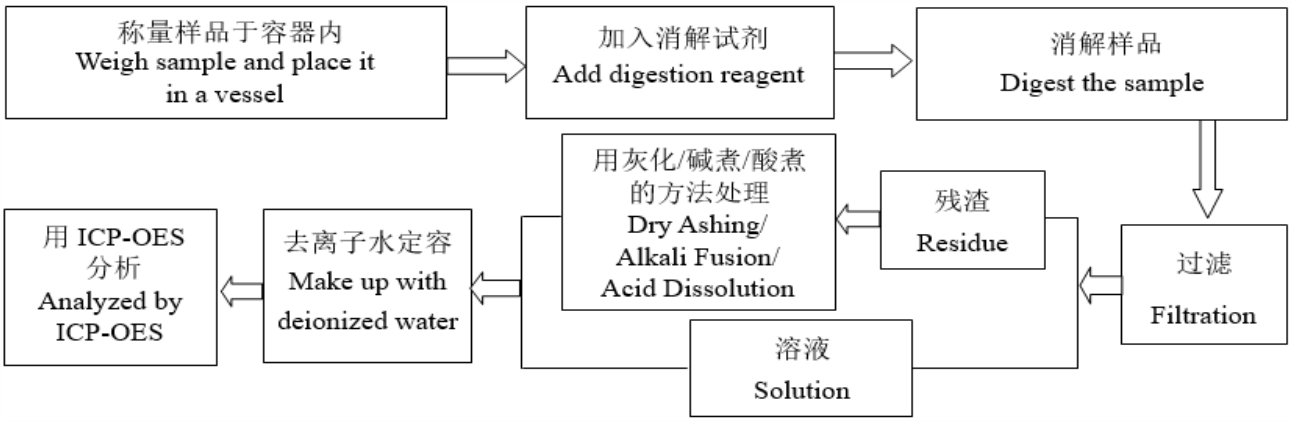
Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

检测报告
Test Report

检测流程 Test Process

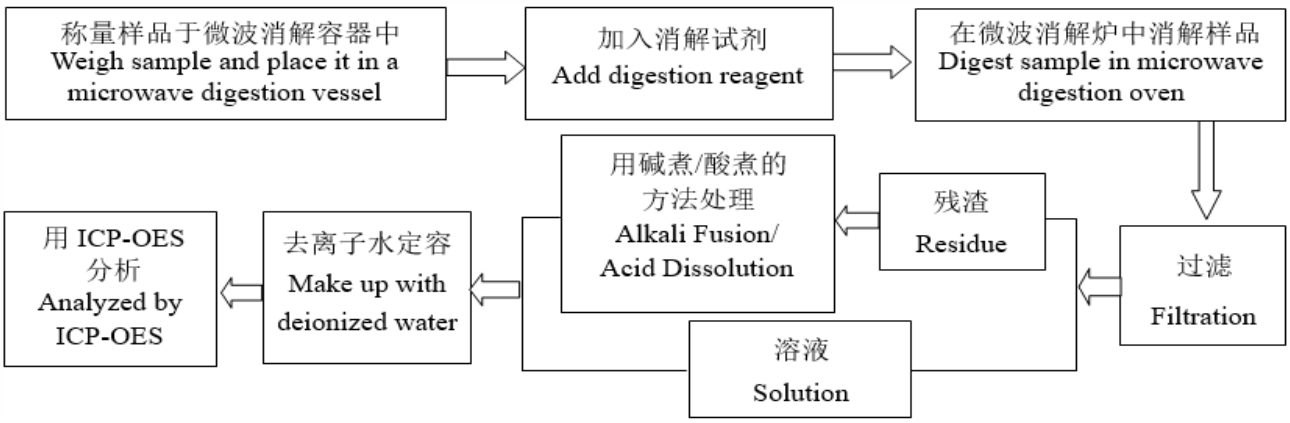
1. **铅(Pb)，镉(Cd)，铬(Cr)**

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



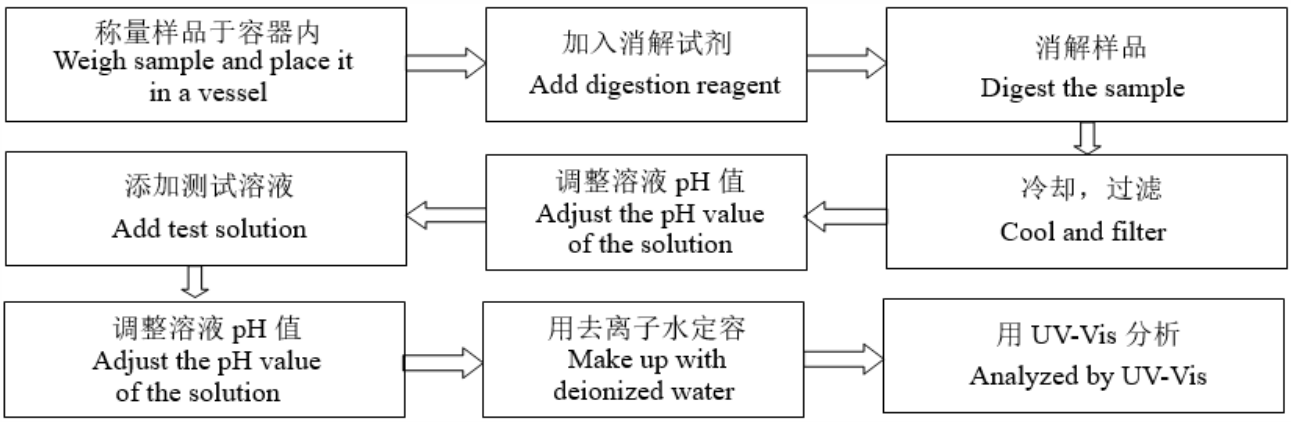
2. **汞(Hg)**

Mercury (Hg)



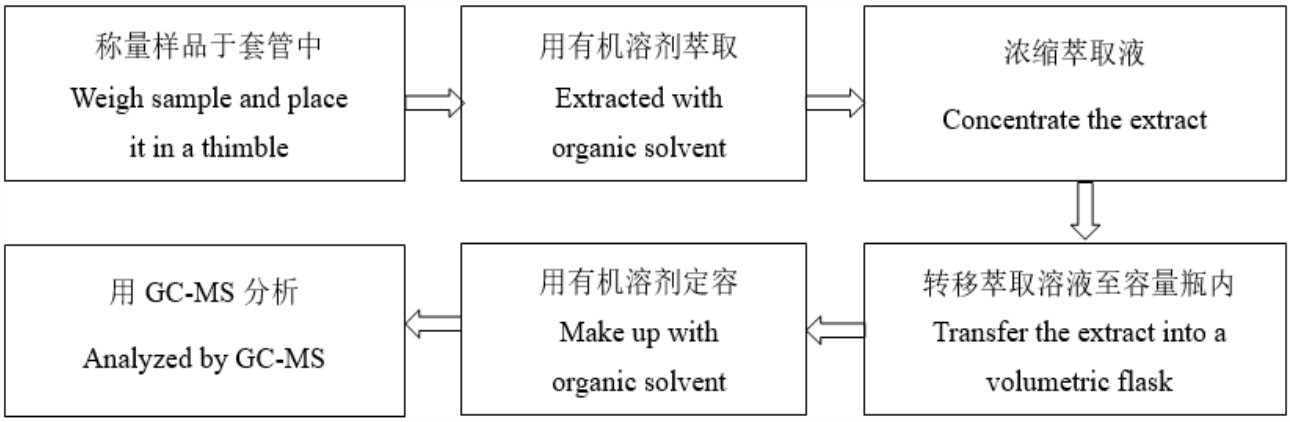
3. **六价铬(Cr(VI))**

Hexavalent Chromium (Cr(VI))



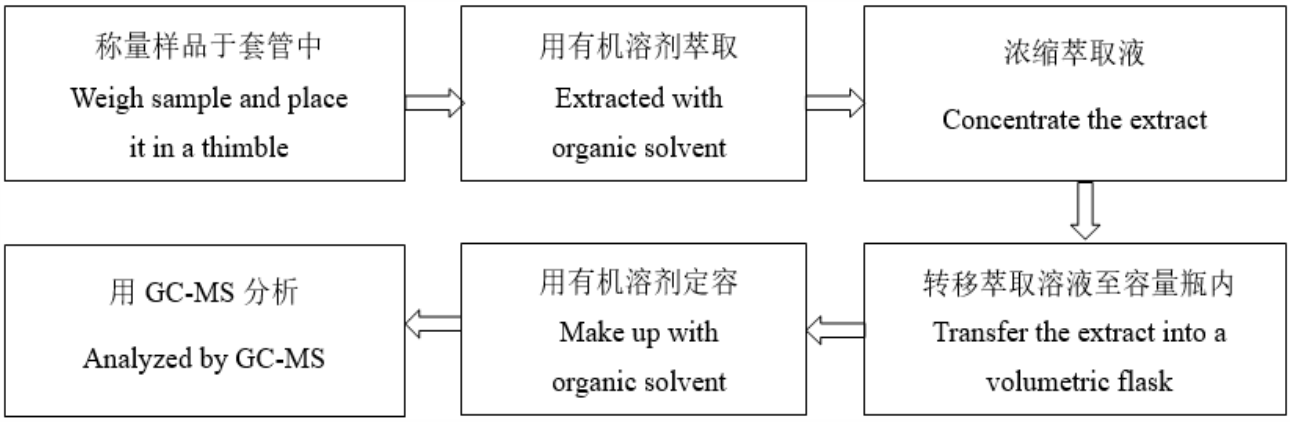
4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)

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



5. 邻苯二甲酸酯(DBP， BBP， DEHP， DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



检测报告
Test Report

样品图片
Photo(s) of the sample(s)

声明Statement：

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效；
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   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. 本报告检测结果仅对受测样品负责；
   The result(s) shown in this report refer(s) only to the sample(s) tested;
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   In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

报告结束

*** End of report ***

Test Report

No: 10522551(1) Date: 09-Sep-2021

I-Pex Singapore Pte Ltd
55 Yishun Industrial Park A Singapore 768728

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

Sample Name	:	D line Au
Sample Receiving Date	:	01-Sep-2021
Testing Period	:	01-Sep-2021 to 09-Sep-2021
Test Requested	:	In accordance with the RoHS Directive 2011/65/EU Annex II.

Test Result(s) : Please refer to next page(s).

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd

Y.C. Tham
Technical Manager, Multi-Lab

SGS TESTING & CONTROL SERVICES SINGAPORE PTE LTD ★ LABORATORY

Test Result(s):

Sample Description : Gold coloured flakes

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	17.5	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	1000
Hexavalent Chromium (Cr(VI)) #	µg/cm2	With reference to IEC62321-7-1 :2015. Analysis was performed by UV-Vis Spectrometry.	n.d.	0.1	-

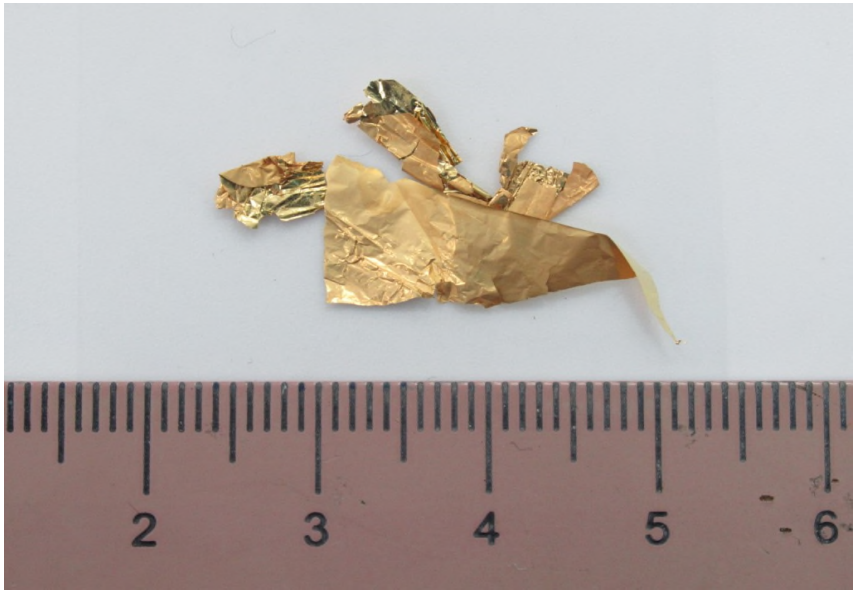
Note:
(1) mg/kg = ppm ; 0.1wt% = 1000ppm
(2) n.d.= Not Detected
(3) MDL = Method Detection Limit
(4) "-" = Not regulated
(5) * : Exceeds limit
(6) # = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13µg/cm2. The sample coating is considered to contain Cr(VI)
b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10µg/cm2. The coating is considered a non-Cr(VI) based coating
c. The result between 0.10µg/cm2 and 0.13µg/cm2 is considered to be inconclusive - unavoidable coating variations may influence the determination

Remarks: Sample received was totally dissolved by preconditioning methods.
Lab Analyst(s): AQ and Joela

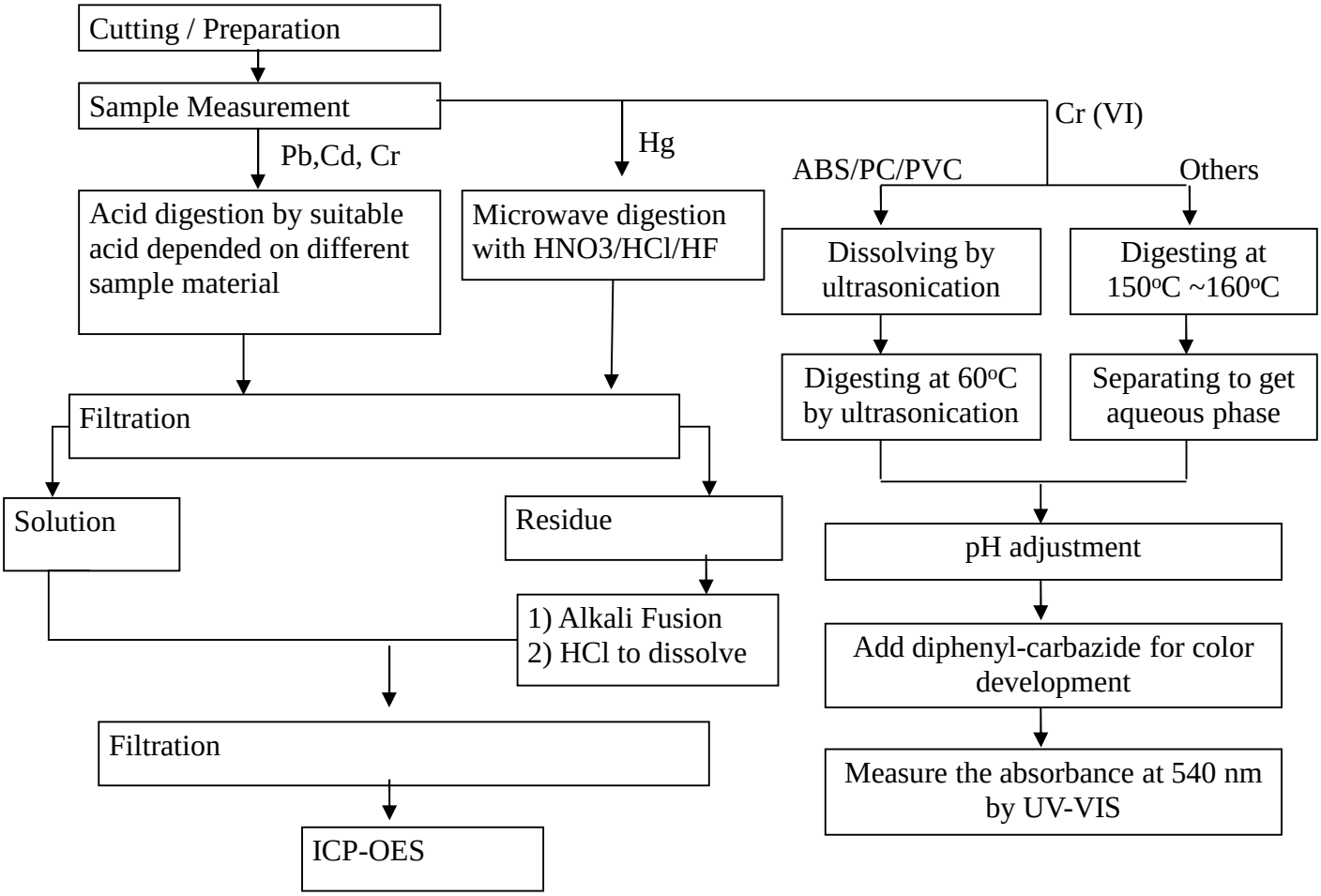
Sample photo:

Sample Description : Gold coloured flakes

SGS authenticate the photo on original report only

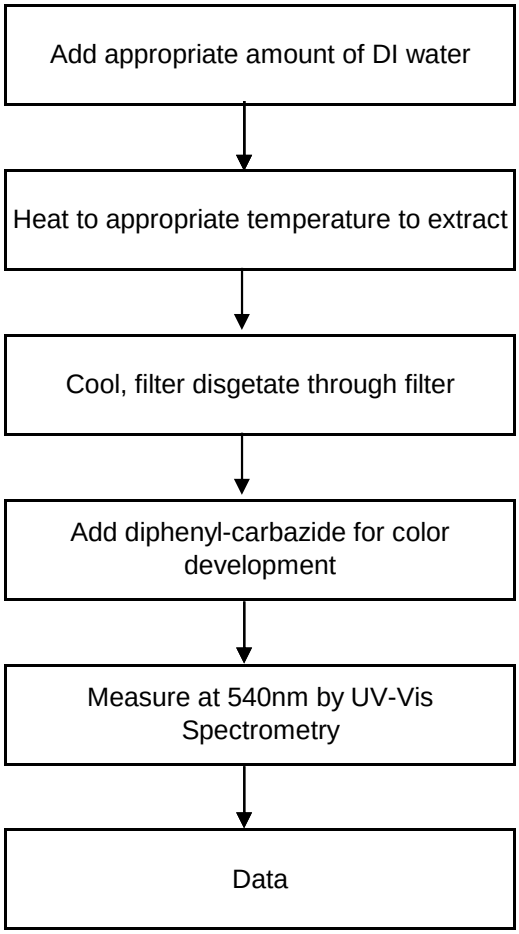


Process Flow of IEC 62321 (Pb, Cd, Hg, Cr & Cr(VI))



Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

Process Flow of Cr(VI) by Boiling Water Extraction (IEC62321)



End of Report

Test Report

No: 10522551(2) Date: 09-Sep-2021

I-Pex Singapore Pte Ltd
55 Yishun Industrial Park A Singapore 768728

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

Sample Name	:	D line Ni
Sample Receiving Date	:	01-Sep-2021
Testing Period	:	01-Sep-2021 to 09-Sep-2021
Test Requested	:	In accordance with the RoHS Directive 2011/65/EU Annex II.

Test Result(s) : Please refer to next page(s).

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd

Y.C. Tham
Technical Manager, Multi-Lab

Test Result(s):

Sample Description : Silver coloured flakes

Test Item(s):	Unit	Method	Results	MDL	RoHS Limit
Cadmium(Cd)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	100
Lead (Pb)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	1000
Mercury (Hg)	mg/kg	With reference to IEC62321-5 :2013. Analysis was performed by ICP/OES	n.d.	2	1000
Hexavalent Chromium (Cr(VI)) #	µg/cm2	With reference to IEC62321-7-1 :2015. Analysis was performed by UV-Vis Spectrometry.	n.d.	0.1	-

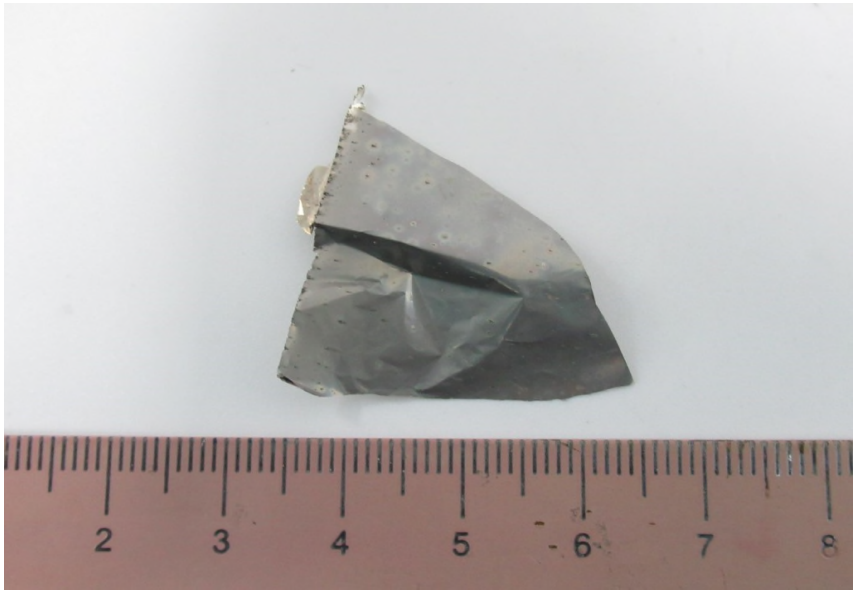
Note:
(1) mg/kg = ppm ; 0.1wt% = 1000ppm
(2) n.d.= Not Detected
(3) MDL = Method Detection Limit
(4) "-" = Not regulated
(5) * : Exceeds limit
(6) # = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13µg/cm2. The sample coating is considered to contain Cr(VI)
b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10µg/cm2. The coating is considered a non-Cr(VI) based coating
c. The result between 0.10µg/cm2 and 0.13µg/cm2 is considered to be inconclusive - unavoidable coating variations may influence the determination

Remarks: Sample received was totally dissolved by preconditioning methods.
Lab Analyst(s): AQ and Joela

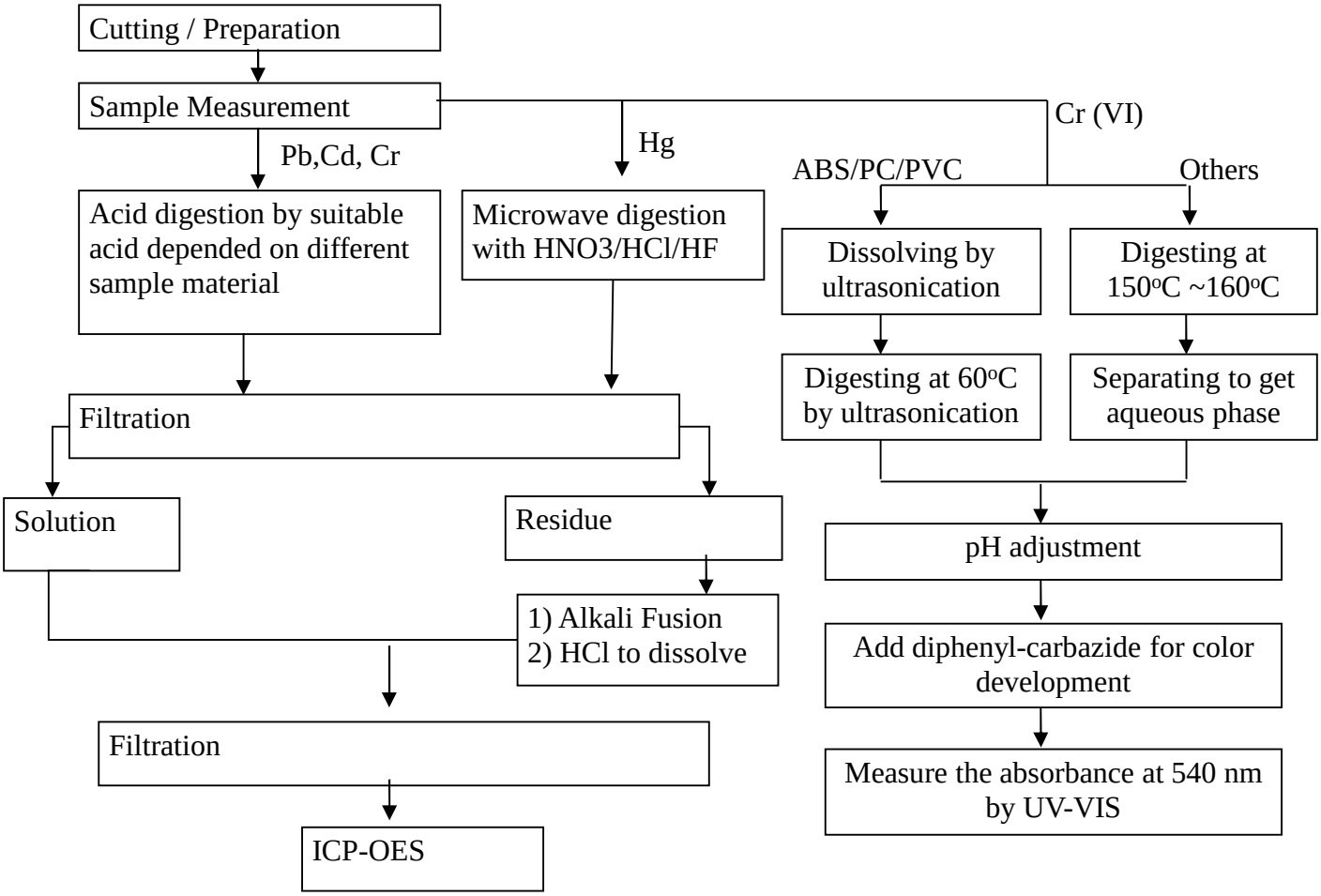
Sample photo:

Sample Description : Silver coloured flakes

SGS authenticate the photo on original report only

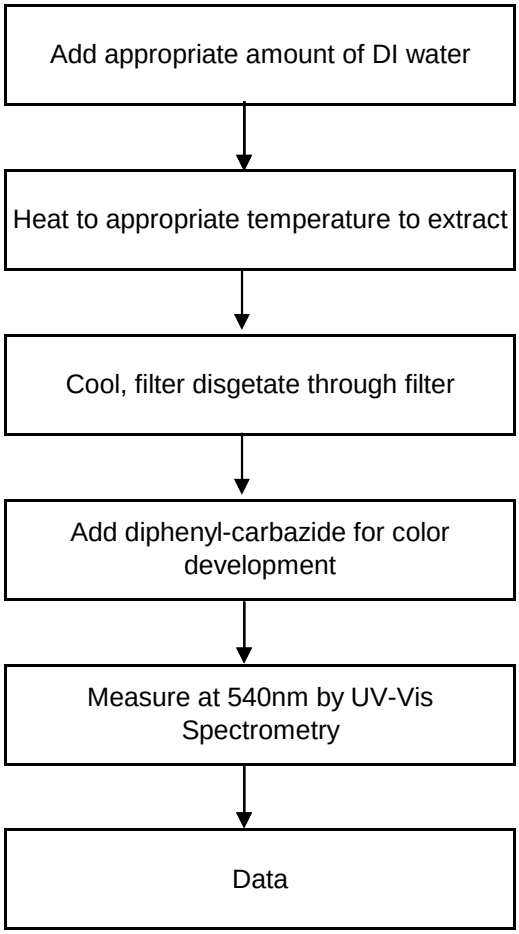


Process Flow of IEC 62321 (Pb, Cd, Hg, Cr & Cr(VI))



Remarks: Sample received was totally dissolved by preconditioning method. (CrVI method excluded)

Process Flow of Cr(VI) by Boiling Water Extraction (IEC62321)



End of Report

Test Report

No.: ETR21803360M01 Date: 02-Sep-2021

JX NIPPON MINING & METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

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

Sample Submitted By	:	JX NIPPON MINING & METALS CORPORATION
Sample Name	:	COPPER ALLOY
Style/Item No.	:	C5191

==========

Sample Receiving Date	:	16-Aug-2021
Testing Period	:	16-Aug-2021 to 02-Sep-2021

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample(s).

Test Results : Please refer to following pages.

Troy Chang / Manager - Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

CHECK REPORT
PIN CODE: A14644B2

JX NIPPON MINING & METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

Test Part Description

No.1 : COPPER COLORED METAL

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Lead (Pb) (CAS No.: 7439-92-1)		mg/kg	2	15.2
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.
Hexavalent Chromium Cr(VI) (CAS No.: 18540-29-9) (#2)	With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.	μg/cm²	0.1	n.d.

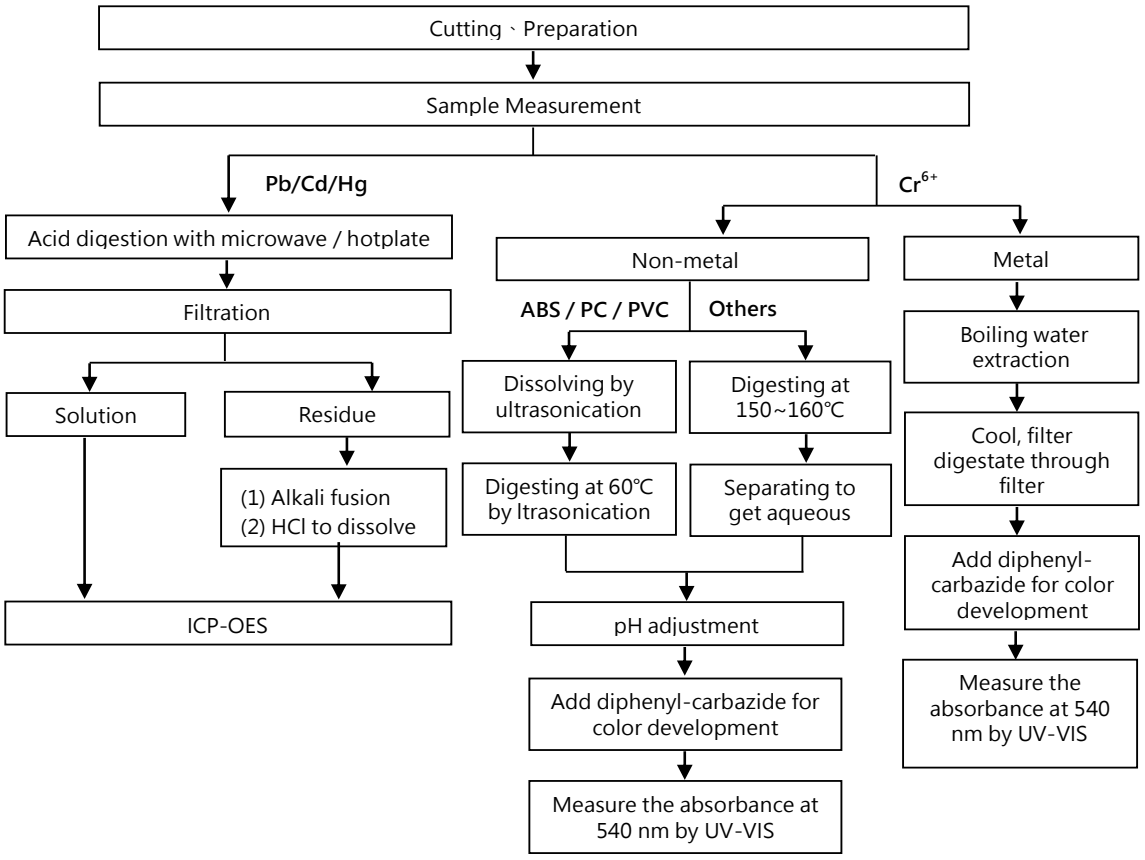
Note：

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. (#2) =
   a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μg/cm². The sample coating is considered to contain Cr(VI).
   b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 μg/cm²). The coating is considered a non-Cr(VI) based coating
   c. The result between 0.10 μg/cm² and 0.13 μg/cm² is considered to be inconclusive - unavoidable coating variations may influence the determination.
5. This is the additional test report of ETR21803360.

JX NIPPON MINING & METALS CORPORATION
3 KURAMI, SAMUKAWA, KOZA, KANAGAWA 253-0101, JAPAN

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr^{6+} test method excluded)



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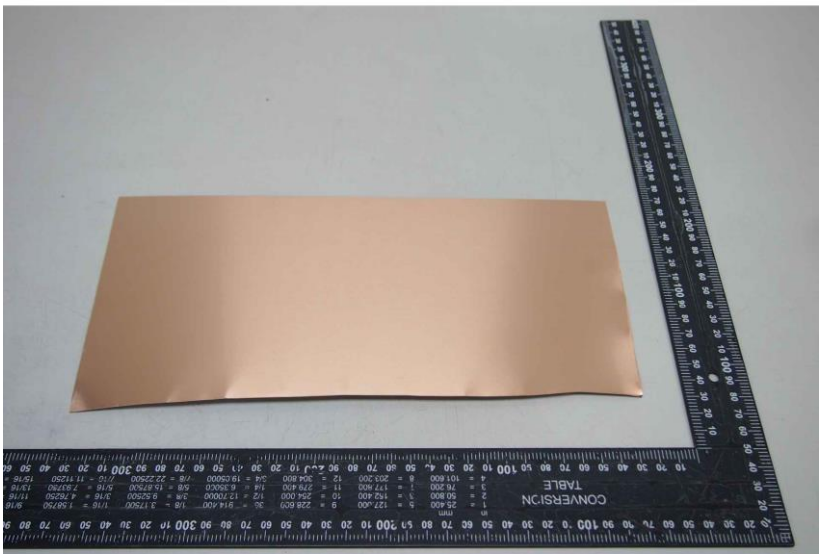
*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

ETR21803360



** End of Report **

3M CHINA LIMITED

222 TIANLIN ROAD, SHANGHAI

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 467MP

SGS Job No. :	SP21-027405 - SH
Model No. :	3M 467MP
Client Ref. Information :	3M 468MP, 3M 467MC, 3M 468MC, 3M 467MPF, 3M 468MPF
Date of Sample Received :	30 Aug 2021
Testing Period :	30 Aug 2021 - 04 Sep 2021
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

scan to see the report

SHAEC2118728901

Dora Hu

Dora Hu
Approved Signatory

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中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-187289.001	Colorless transparent adhesive film

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	*001*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND

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Test Item(s)	Limit	Unit	MDL	*001*
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101::::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments,including industrial monitoring and control instruments, from 22 July 2021.

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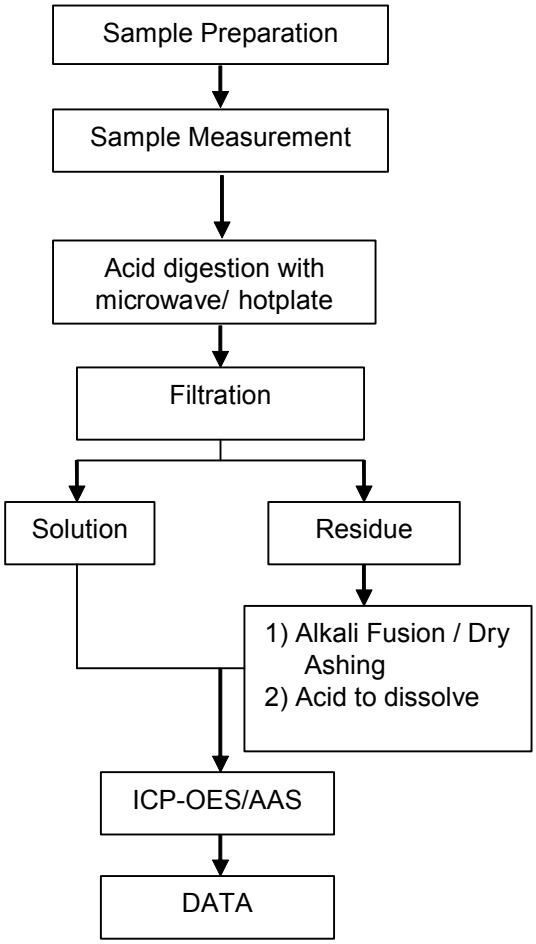
ATTACHMENTS

Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.



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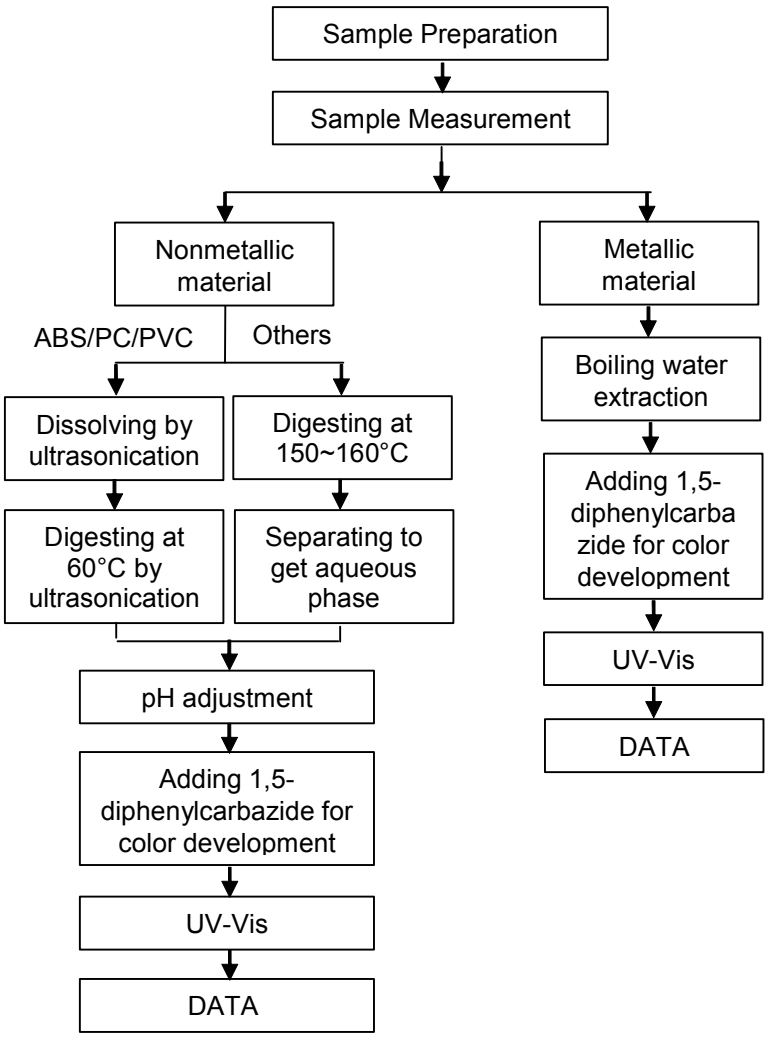
ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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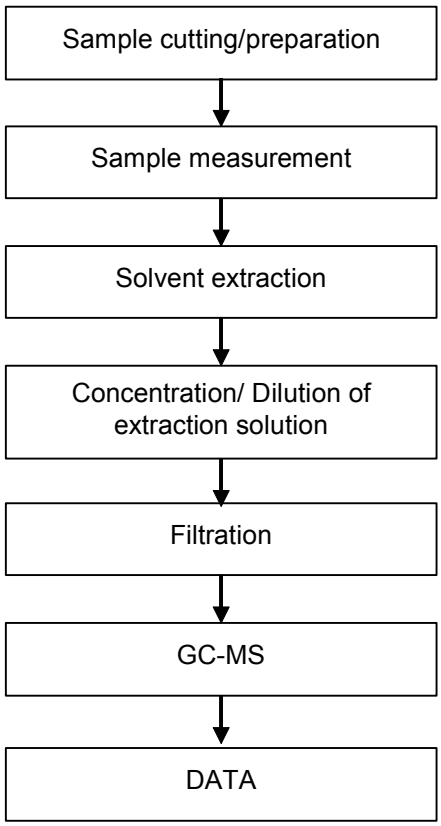
ATTACHMENTS

PBBs/PBDEs Testing Flow Chart



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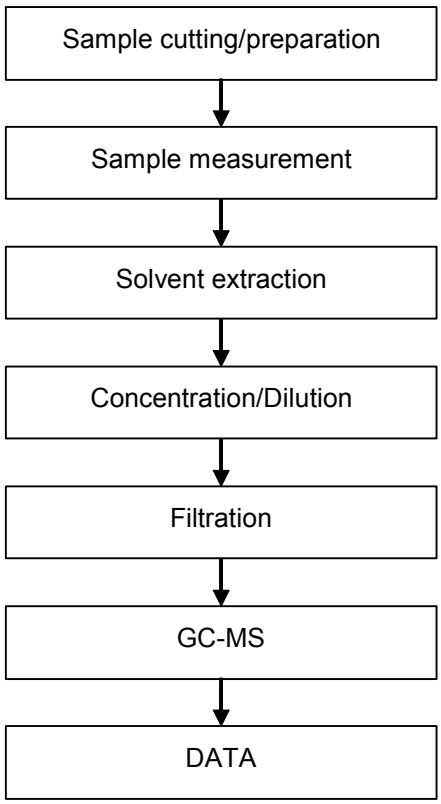
ATTACHMENTS

Phthalates Testing Flow Chart



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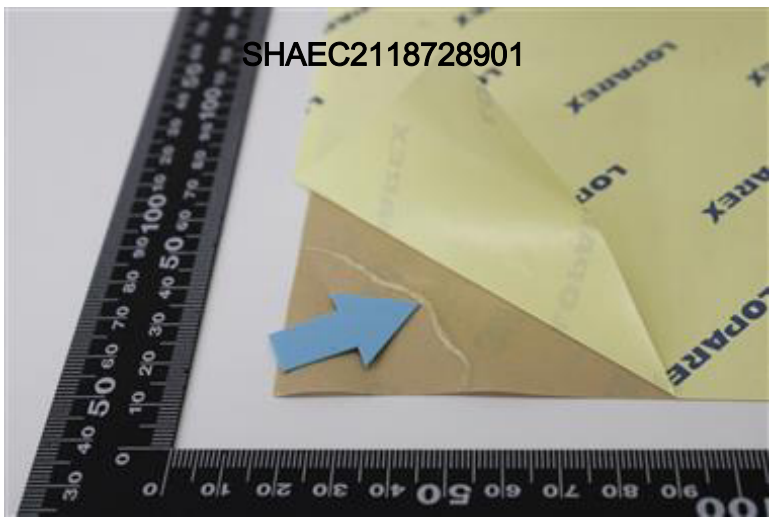
Sample photo:



SHA21-187289.001

SGS authenticate the photo on original report only

*** End of Report ***

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Test Report

3M CHINA LIMITED

222 TIANLIN ROAD, SHANGHAI

The following sample(s) was/were submitted and identified on behalf of the clients as : 3M 467MP

SGS Job No. :	SP21-027405 - SH
Model No. :	3M 467MP
Client Ref. Information :	3M 468MP, 3M 467MC, 3M 468MC, 3M 467MPF, 3M 468MPF
Date of Sample Received :	30 Aug 2021
Testing Period :	30 Aug 2021 - 04 Sep 2021
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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SHAEC2118728903

Dora Hu

Dora Hu
Approved Signatory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA21-187289.001	Colorless transparent adhesive film

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

Halogen

Test Method : With reference to EN 14582: 2016 , analysis was performed by IC.

Test Item(s)	Unit	MDL	*001*
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	136
Bromine (Br)	mg/kg	50	ND
Iodine (I)	mg/kg	50	ND

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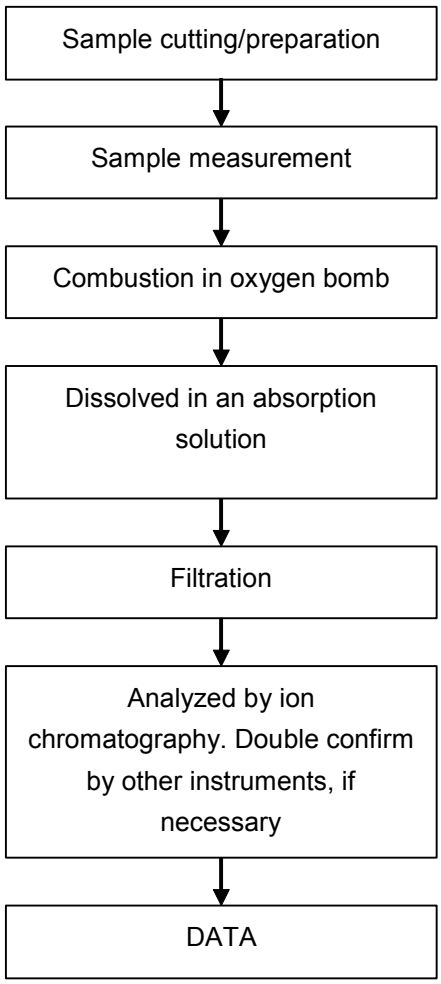
ATTACHMENTS

Halogen Testing (oxygen bomb) Flow Chart



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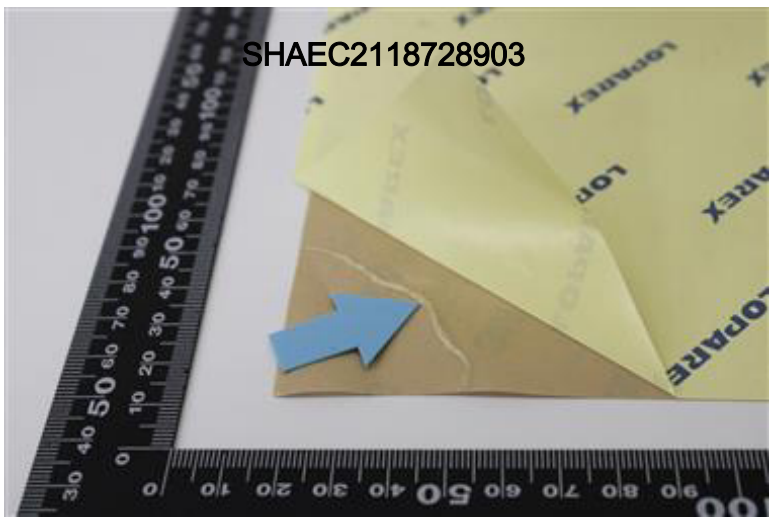
Sample photo:



SHA21-187289.001

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CTI 华测检测 CENTRE TESTING INTERNATIONAL

检测报告
Test Report

报告编号 A2210079784101002E 第 1 页 共 15 页
Report No. A2210079784101002E Page 1 of 15

报告抬头公司名称 聯茂（無錫）電子科技有限公司
Company Name shown on Report ITEQ(WUXI)ELECTRONIC TECHNOLOGIES CO.,LTD
地 址 Address 江蘇省無錫市錫山區東亭鎮春暉中路 3 號 NO.3 CHUN HUI MIDDLE ROAD,XISHAN ECONOMIC DEVELOPMENT ZONE,WUXI CITY,JIANGSU PROVINCE

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称 Sample Name	覆銅箔基板
样品型号 Part No.	IT-258GA2TC
样品接收日期 Sample Received Date	2021.03.11 Mar. 11, 2021
样品检测日期 Testing Period	2021.03.11-2021.03.17 Mar. 11, 2021 to Mar. 17, 2021

检测依据/检测结果/检测要求 Test Method/Test Result(s)/ Test Requested 请参见下页。 Please refer to the following page(s).

主 检 Tested by 刘盈妹 审 核 Reviewed by 徐忠娟

批 准 Approved by 陈凯敏 日 期 Date 2021.03.17

陈凯敏
实验室经理 Lab Manager

No. R188381080

上海华测品标检测技术有限公司 上海市闵行区万芳路 1351 号
Centre Testing International Pinbiao(Shanghai) Co., Ltd. No.1351, Wanfang Road, Minhang District, Shanghai, China

检验检测专用章 Inspection & Testing Services

检测报告
Test Report

检测要求	1.根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，砷(As)，铍(Be)，镍(Ni)，锑(Sb)，六溴环十二烷(HBCDD)，氟(F)，氯(Cl)，溴(Br)，碘(I)，四溴双酚 A (TBBP-A)，邻苯二甲酸酯，聚氯乙烯(PVC)，全氟辛酸(PFOA),全氟辛烷磺酸(PFOS)进行测试。 2. 根据客户要求，对所提交样品中的氧化铍(BeO)，三氧化二锑(Sb_2O_3)进行筛选测试。
Test Requested	1.As specified by client, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs), Arsenic(As), Beryllium(Be), Nickel(Ni), Antimony(Sb), Hexabromocyclododecane (HBCDD), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Tetrabromobisphenol A (TBBP-A), Phthalates, Polyvinyl Chloride (PVC), Perfluorooctanoic Acid (PFOA) , Perfluorooctane Sulfonates(PFOS) in the submitted sample(s). 2. As specified by client, to screen the Beryllium oxide(BeO), Antimonytrioxide (Sb_2O_3)in the submitted sample(s).

检测报告
Test Report

检测依据 Test Method

测试项目 Tested Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))	IEC 62321-7-1:2015, IEC 62321-7-2:2017 和/或 IEC 62321-5:2013 测试总铬含量 IEC 62321-7-1:2015, IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
砷 Arsenic(As)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
铍 Beryllium(Be)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
镍 Nickel(Ni)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
锑 Antimony(Sb)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
六溴环十二烷 Hexabromocyclododecane (HBCDD)	参考 US EPA 3550C:2007 & US EPA 8270E:2017 Refer to US EPA 3550C:2007 & US EPA 8270E:2017	GC-MS
氟 Fluorine (F)	参考 EN 14582:2016 Refer to EN 14582:2016	IC

检测报告
Test Report

测试项目 Tested Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
氯 Chlorine (Cl)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考 EN 14582:2016 Refer to EN 14582:2016	IC
四溴双酚 A Tetrabromobisphenol A (TBBP-A)	参考 US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS/LC-MS
邻苯二甲酸酯 Phthalates(DMEP,DNHP,DPP,DIDP, DINP,DIPP,DNOP)	参考 EN 14372:2004(E) Refer to EN 14372:2004(E)	GC-MS
三氧化二锑 Antimony trioxide (Sb_2O_3)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
聚氯乙烯 Polyvinyl Chloride (PVC)	参考 JY/T 001-1996 Refer to JY/T 001-1996	FT-IR
氧化铍 Beryllium oxide (BeO)	参考 US EPA 3052:1996 & US EPA 6010D:2018 Refer to US EPA 3052:1996 & US EPA 6010D:2018	ICP-OES
全氟辛酸(PFOA) Perfluorooctanoic Acid (PFOA)	参考 CEN/TS 15968:2010 Refer to CEN/TS 15968:2010	LC-MS-MS/LC-MS
全氟辛烷磺酸 (PFOS) Perfluorooctane Sulfonates (PFOS)	参考 CEN/TS 15968:2010 Refer to CEN/TS 15968:2010	LC-MS-MS/LC-MS

检测结果 Test Result(s)

测试项目 Tested Item(s)	**结果 Result**	**方法检出限 MDL**
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
砷 Arsenic (As)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铍 Beryllium (Be)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
镍 Nickel (Ni)	27 mg/kg	2 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
锑 Antimony (Sb)	N.D.	10 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
六溴环十二烷 Hexabromocyclododecane (HBCDD)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
氟 Fluorine (F)	440 mg/kg	10 mg/kg
氯 Chlorine (Cl)	182 mg/kg	10 mg/kg
溴 Bromine (Br)	N.D.	10 mg/kg
碘 Iodine (I)	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
四溴双酚 A Tetrabromobisphenol A (TBBP-A)	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二正辛酯 Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	50 mg/kg
邻苯二甲酸二异壬酯 Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
邻苯二甲酸二异癸酯 Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
邻苯二甲酸二戊酯 Dipentyl phthalate (DPP) CAS#:131-18-0	N.D.	50 mg/kg
邻苯二甲酸二己酯 Di-n-hexyl phthalate (DNHP) CAS#:84-75-3	N.D.	50 mg/kg

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测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二(2-甲氧基)乙酯 Bis(2-methoxyethyl) phthalate (DMEP) CAS#:117-82-8	N.D.	50 mg/kg
邻苯二甲酸二异戊酯 Diisopentylphthalate (DIPP) CAS#:605-50-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
三氧化二锑 Antimony trioxide (Sb_2O_3)*	N.D.	10 mg/kg
氧化铍 Beryllium oxide (BeO)*	N.D.	10 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
聚氯乙烯 Polyvinyl Chloride (PVC)	阴性 Negative	/

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
全氟辛酸(PFOA) Perfluorooctanoic Acid (PFOA)	N.D.	0.01mg/kg
全氟辛烷磺酸 (PFOS) Perfluorooctane Sulfonates (PFOS)	N.D.	0.01mg/kg

样品/部位描述 覆铜板
Sample/Part Description Cupreous clad laminate

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备注: **对于检测铅，镉，汞，砷，铍，镍，锑之样品已完全溶解。**

-N.D. = 未检出 (小于方法检出限)

-mg/kg = ppm = 百万分之一

-阴性表示不含有聚氯乙烯(PVC)

-* =该项目的检测结果由其特征元素的测试结果换算而来。

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

-MDL = Method Detection Limit

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

-mg/kg = ppm = parts per million

-Negative = Not contained Polyvinyl Chloride (PVC)

-* = The test result of the item is converted fromthe test result of certain element.

注释: **本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。**

Note: **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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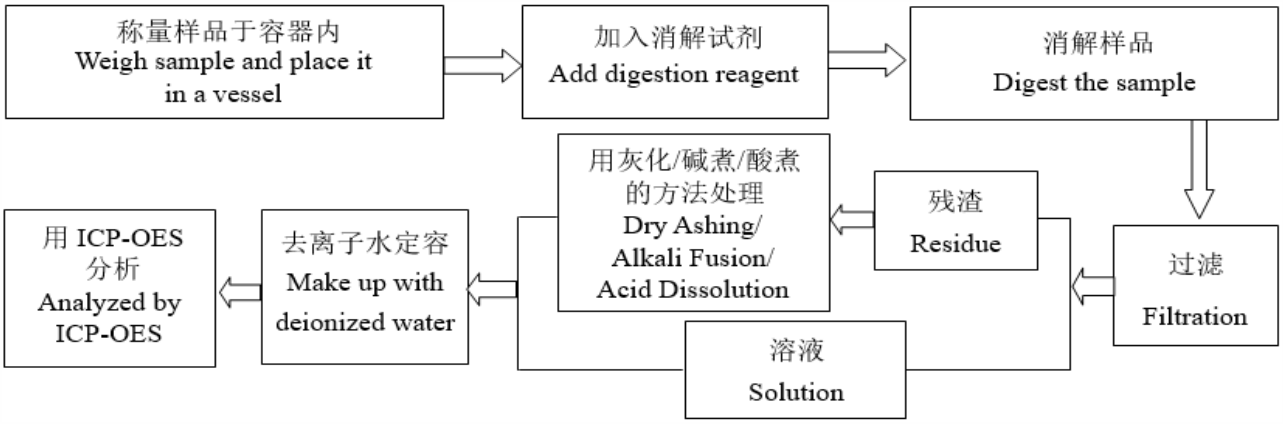
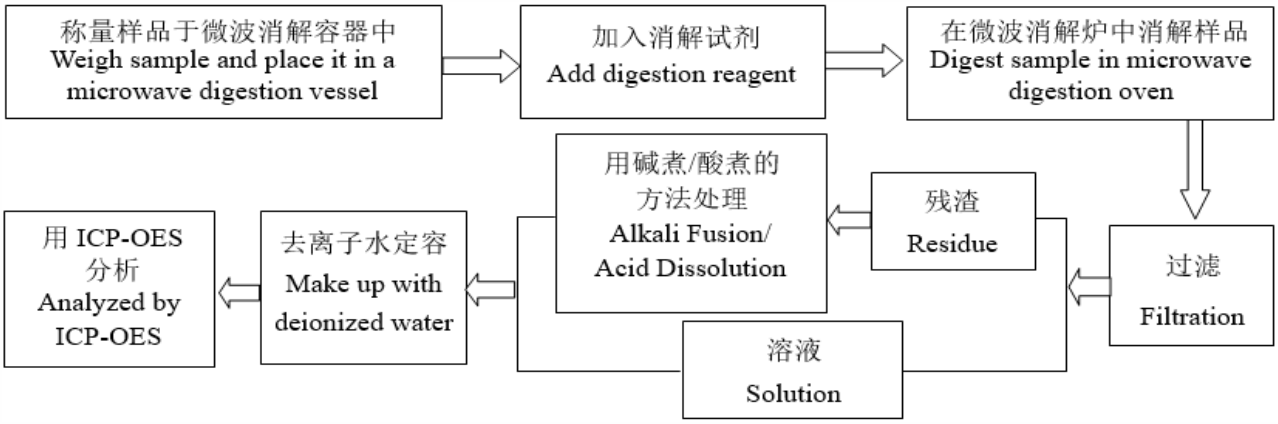
检测流程 Test Process

1. 铅 Lead (Pb), 镉 Cadmium (Cd), 铬 Chromium(Cr)



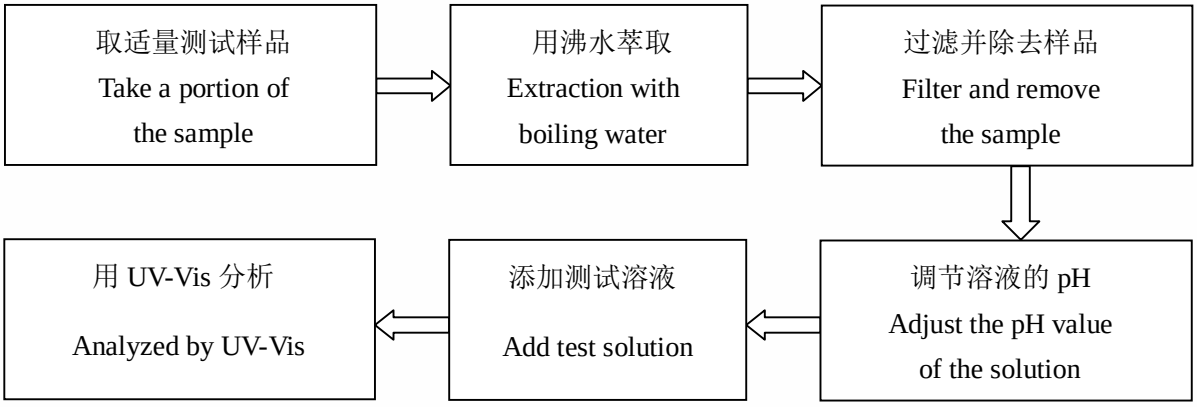
2. 汞 Mercury (Hg)



3. 六价铬(Cr(VI)) Hexavalent Chromium (Cr(VI))

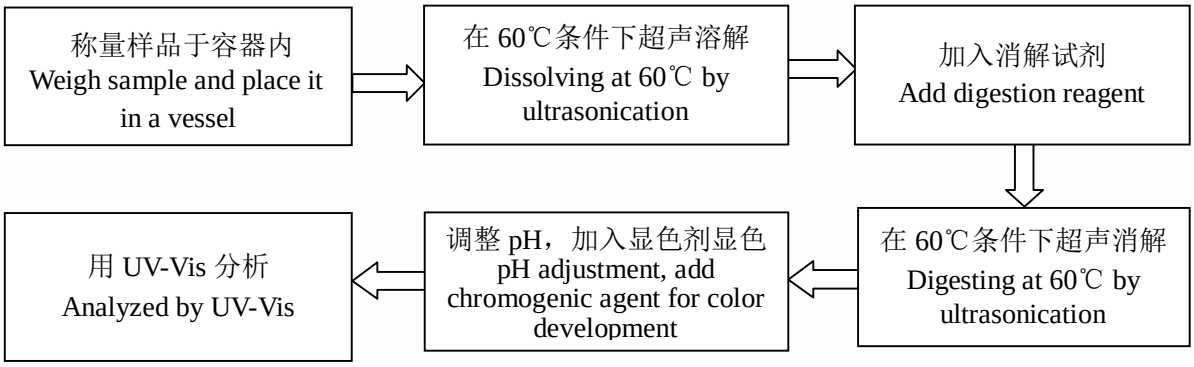
(1) IEC 62321-7-1:2015

镀层/金属样品 Plating/Metal sample(s)



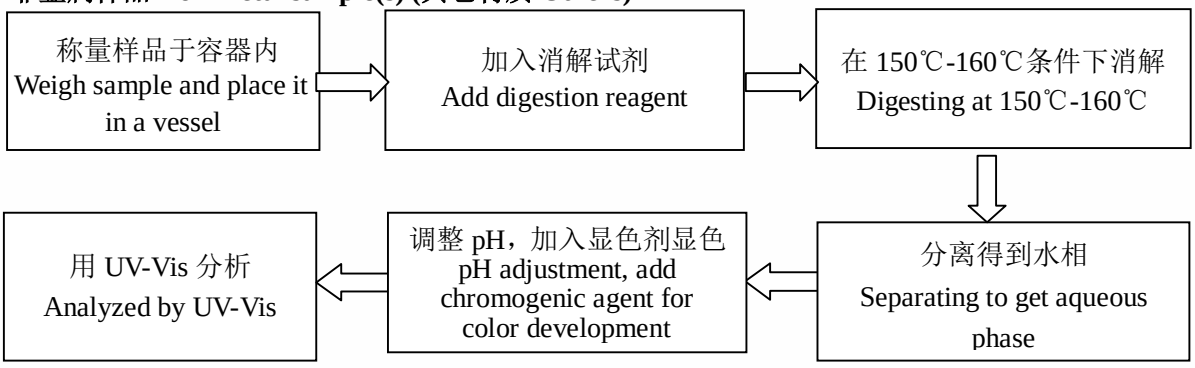
(2) IEC 62321-7-2:2017

非金属样品 Non-metal sample(s) (ABS/PC/PVC 材质 Material ABS/PC/PVC)

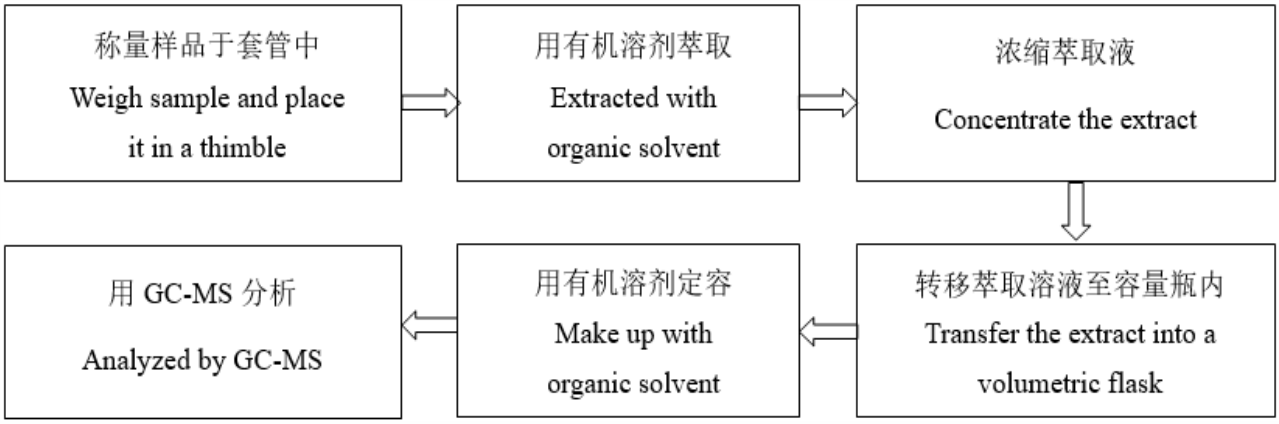


(3) IEC 62321-7-2:2017

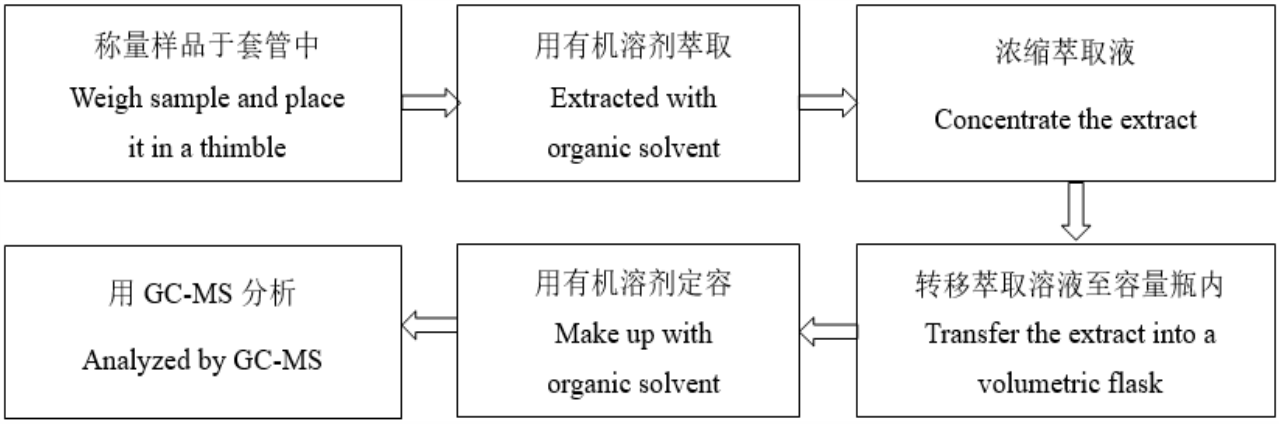
非金属样品 Non-metal sample(s) (其它材质 Others)



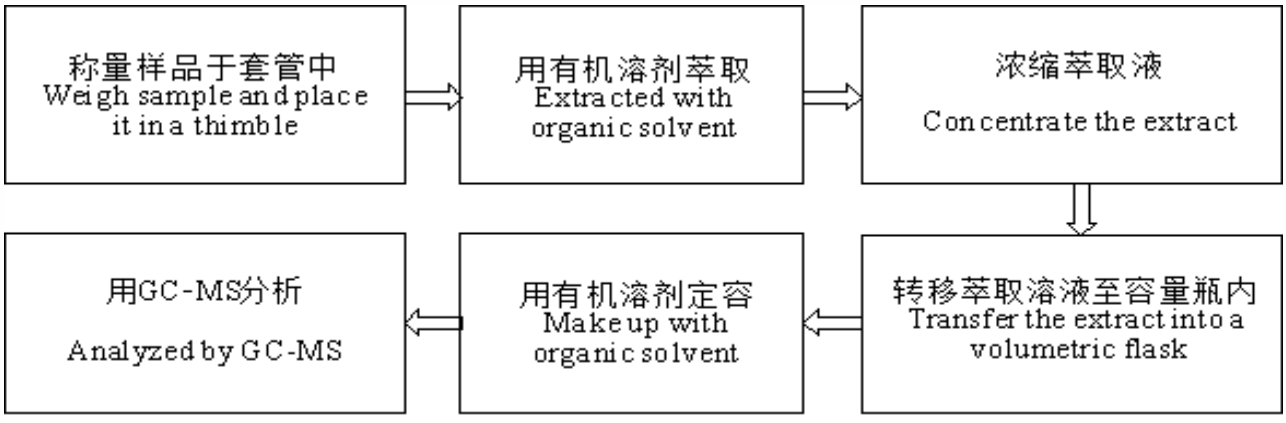
4. 多溴联苯 Polybrominated Biphenyls (PBBs), 多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)



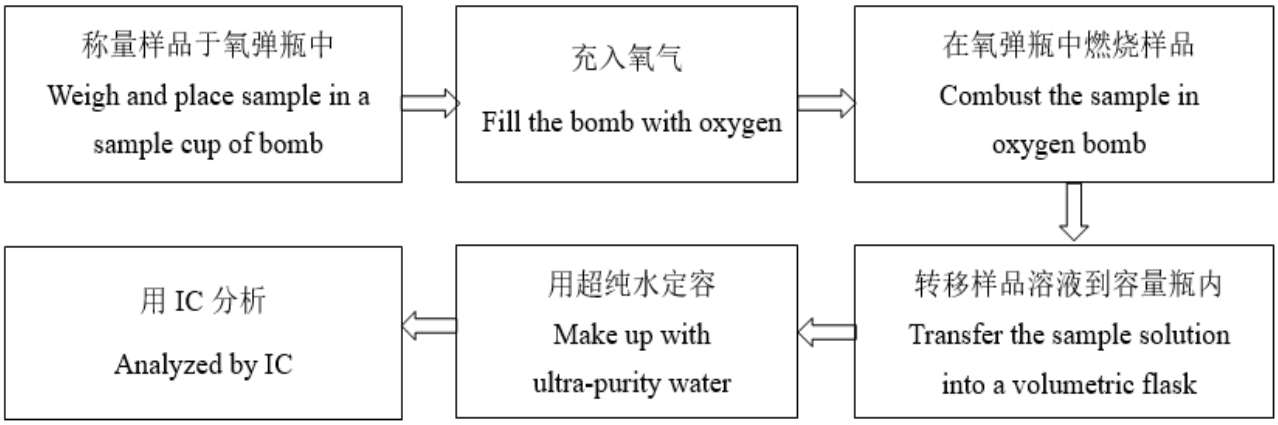
5. 邻苯二甲酸酯 Phthalates



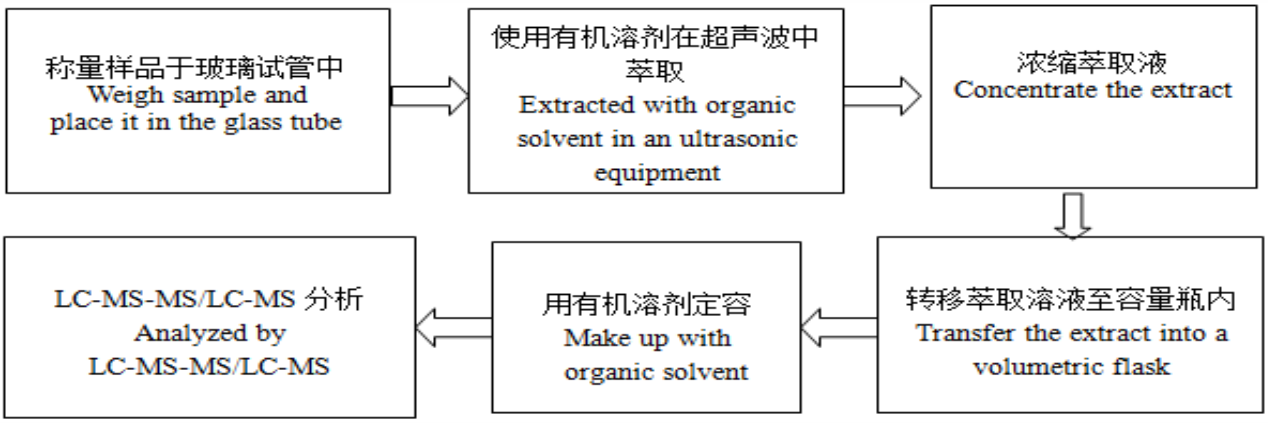
6. 六溴环十二烷 Hexabromocyclododecane (HBCDD)



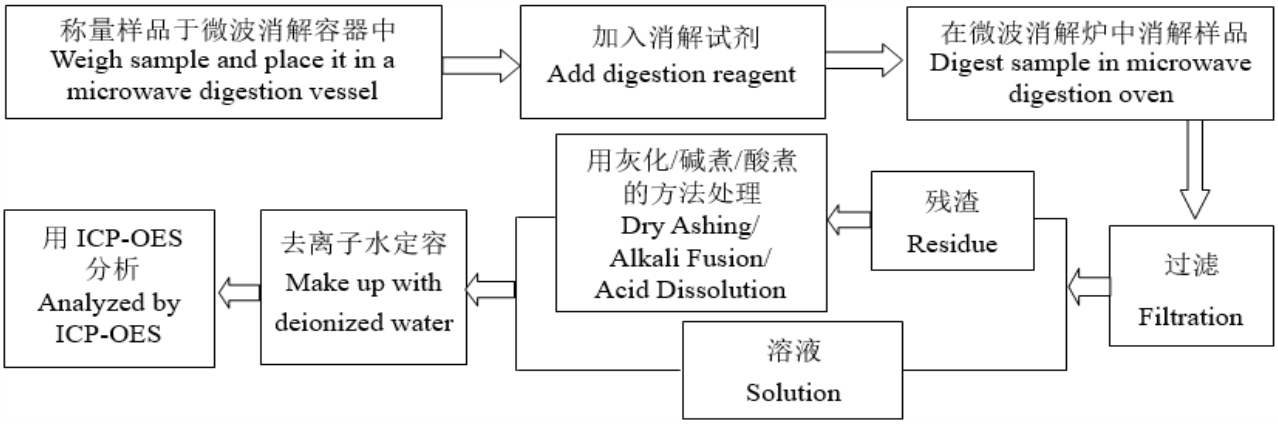
7. 氟 Fluorine (F), 氯 Chlorine (Cl), 溴 Bromine (Br), 碘 Iodine (I)



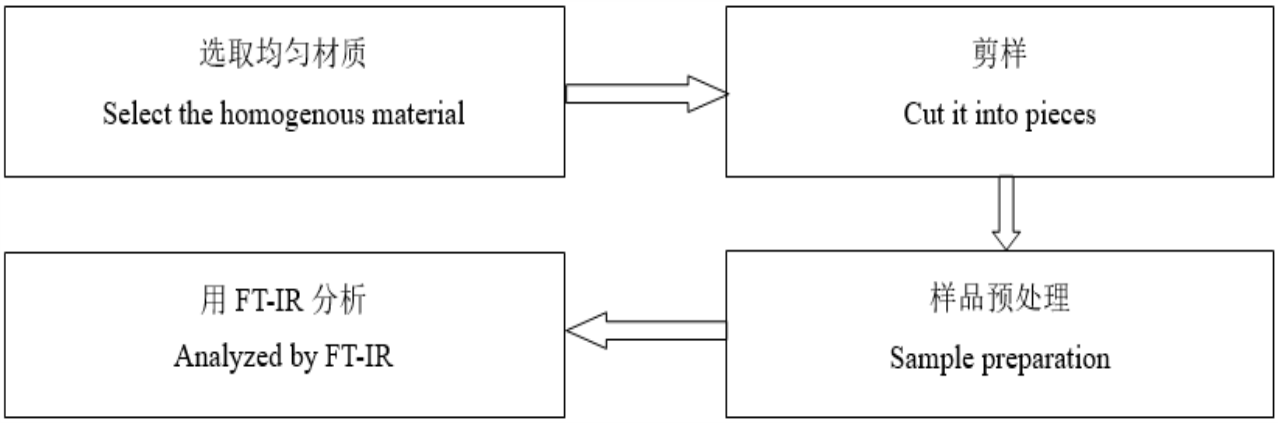
8. 四溴双酚 A Tetrabromobisphenol A (TBBP-A)



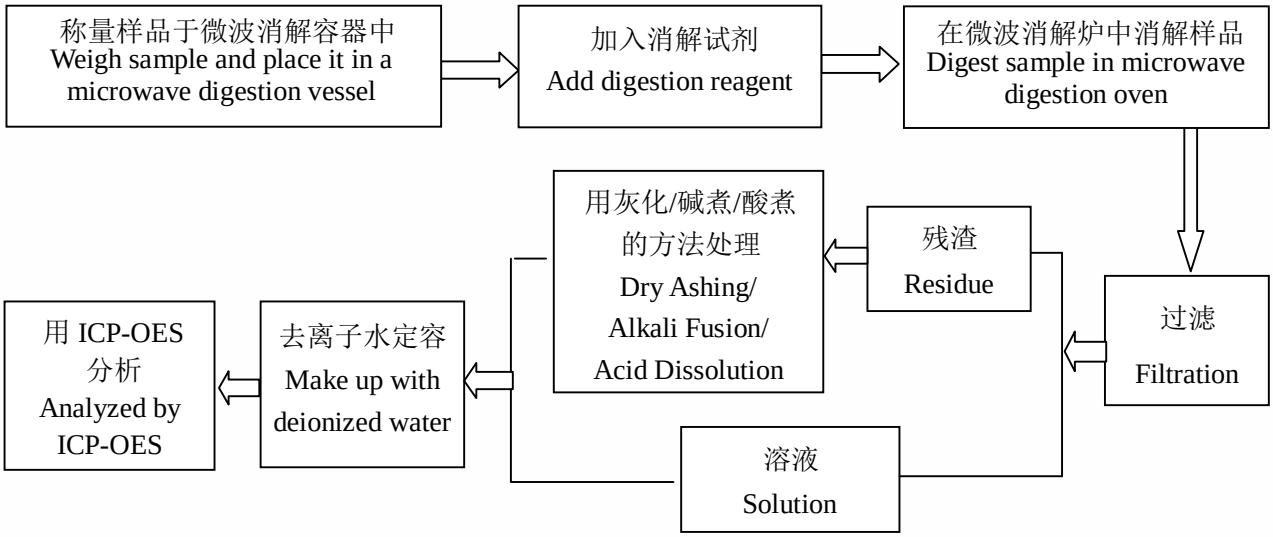
9. 砷 Arsenic(As), 铍 Beryllium(Be), 镍 Nickel(Ni), 锑 Antimony(Sb), 三氧化二锑 Antimony trioxide (Sb_2O_3)



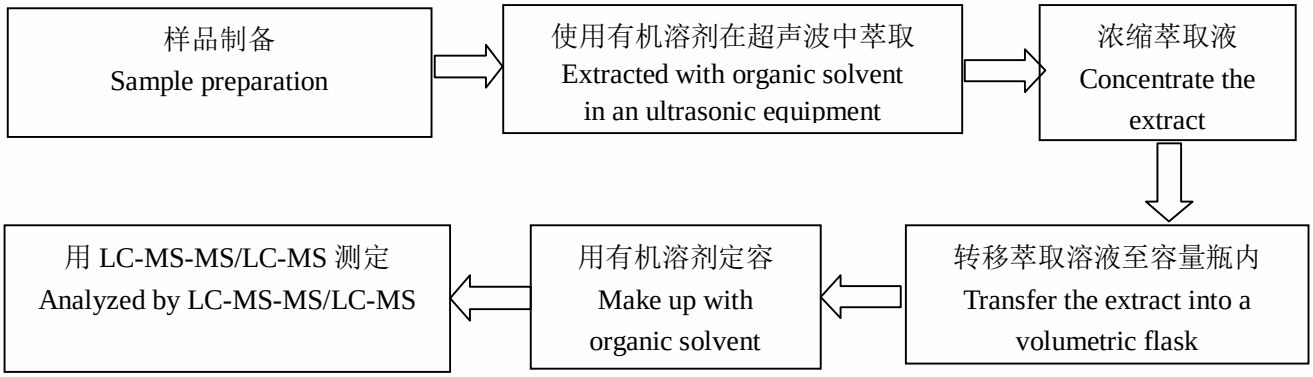
10. 聚氯乙烯 Polyvinyl Chloride (PVC)



11. 氧化铍 Beryllium oxide (BeO)



12. 全氟辛酸, 全氟辛烷磺酸 Perfluorooctanoic Acid (PFOA),Perfluorooctane Sulfonates (PFOS)



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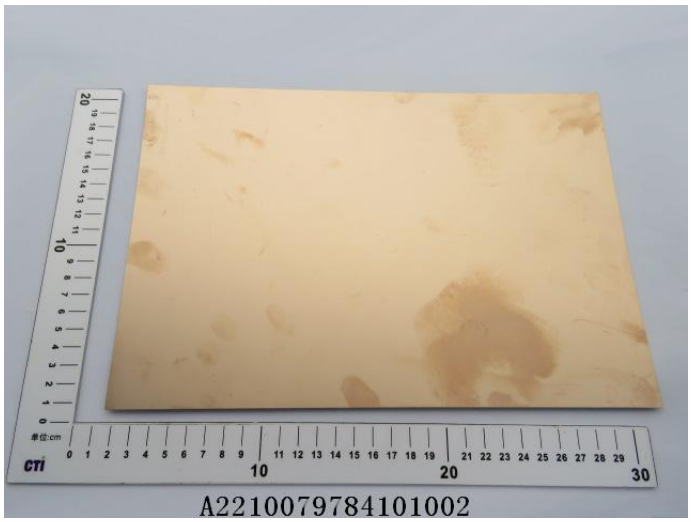
样品图片

Photo(s) of the sample(s)



声明 Statement：

1.检测报告无批准人签字、“专用章”及报告骑缝章无效；

This report is considered invalid without approved signature, special seal and the seal on the perforation;

2.报告抬头公司名称及地址、样品及样品信息由申请者提供，申请者应对其真实性负责，CTI 未核实其真实性；

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.本报告检测结果仅对受测样品负责；

The result(s) shown in this report refer(s) only to the sample(s) tested;

4.未经 CTI 书面同意，不得部分复制本报告；

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5.如检测报告中的英文内容与中文内容有差异，以中文为准。

In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** 报告结束 ***

*** End of Report ***

CTI 华测检测

检测报告
Test Report

报告编号 A2210481408102001E
Report No. A2210481408102001E

报告抬头公司名称 Company Name shown on Report 新东方油墨有限公司 NEWEAST PRINTING INK CO.,LTD

地 址 Address 浙江桐乡市梧桐街道崇福大道2320号 2320 CHONGFU AVENUE,TONGXIANG CITY,ZHEJIANG

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称 Sample Name	油墨 INK
样品型号 Part No.	NSR-9000M1F/BK6 NSR-9000M1F/BK6
样品颜色 Color	黑色 black
样品接收日期 Sample Received Date	2021.11.17 Nov. 17, 2021
样品检测日期 Testing Period	2021.11.17-2021.11.22 Nov. 17, 2021 to Nov. 22, 2021

检测要求 根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，氟(F)，氯(Cl)，溴(Br)，碘(I)，邻苯二甲酸酯进行测试。

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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Phthalates in the submitted sample(s).

检测依据/检测结果 Test Method/Test Result(s) 请参见下页。 Please refer to the following page(s).

主 检 Tested by 李正苏

批 准 Approved by 陈凯敏

陈凯敏
实验室经理 Lab Manager

审 核 Reviewed by 徐忠娟

日 期 Date 2021.11.22

No. R295829841

上海华测品标检测技术有限公司
Centre Testing International Pinbiao(Shanghai) Co., Ltd.
上海市闵行区万芳路1351号
No.1351, Wanfang Road, Minhang District, Shanghai, China

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检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017和/或IEC 62321-5:2013测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
氟 Fluorine (F)	参考EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考EN 14582:2016 Refer to EN 14582:2016	IC
邻苯二甲酸酯 Phthalates(BBP,DEHP,DPhP,DBzP,DPrP,DBP,DCHP,DNHP,DMP,DNP,DPP,DEP,DIBP,DIDP,DINP,DIOP,DNOP)	参考EN 14372:2004(E) Refer to EN 14372:2004(E)	GC-MS

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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
氟 Fluorine (F)	290 mg/kg	10 mg/kg
氯 Chlorine (Cl)	390 mg/kg	10 mg/kg
溴 Bromine (Br)	N.D.	10 mg/kg
碘 Iodine (I)	N.D.	10 mg/kg

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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二正辛酯 Di-n-octyl phthalate (DNOP) CAS#:117-84-0	N.D.	50 mg/kg
邻苯二甲酸二异壬酯 Di-isononyl phthalate (DINP) CAS#:28553-12-0,68515-48-0	N.D.	50 mg/kg
邻苯二甲酸二异癸酯 Di-iso-decyl phthalate (DIDP) CAS#:26761-40-0,68515-49-1	N.D.	50 mg/kg
邻苯二甲酸二甲酯 Dimethyl phthalate (DMP) CAS#:131-11-3	N.D.	50 mg/kg
邻苯二甲酸二乙酯 Diethyl phthalate (DEP) CAS#:84-66-2	N.D.	50 mg/kg
邻苯二甲酸二丙酯 Dipropyl phthalate (DPrP) CAS#:131-16-8	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg
邻苯二甲酸二戊酯 Dipentyl phthalate (DPP) CAS#:131-18-0	N.D.	50 mg/kg
邻苯二甲酸二环己酯 Dicyclohexyl phthalate (DCHP) CAS#:84-61-7	N.D.	50 mg/kg
邻苯二甲酸二异辛酯 Diisooctyl phthalate (DIOP) CAS#:27554-26-3	N.D.	50 mg/kg
邻苯二甲酸二壬酯 Dinonyl phthalate (DNP) CAS#:84-76-4	N.D.	50 mg/kg

检测报告
Test Report

检测结果 Test Result(s)

邻苯二甲酸二己酯 Di-n-hexyl phthalate (DNHP) CAS#:84-75-3	N.D.	50 mg/kg
邻苯二甲酸二苄酯 Dibenzyl phthalate (DBzP) CAS#:523-31-9	N.D.	50 mg/kg
邻苯二甲酸二苯酯 Diphenyl phthalate (DPhP) CAS#:84-62-8	N.D.	50 mg/kg

样品/部位描述 黑色固体
Sample/Part Description Black solid

备注: **对于检测铅，镉，汞之样品已完全溶解。**
-N.D. = 未检出 (小于方法检出限)
-mg/kg = ppm = 百万分之一

Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

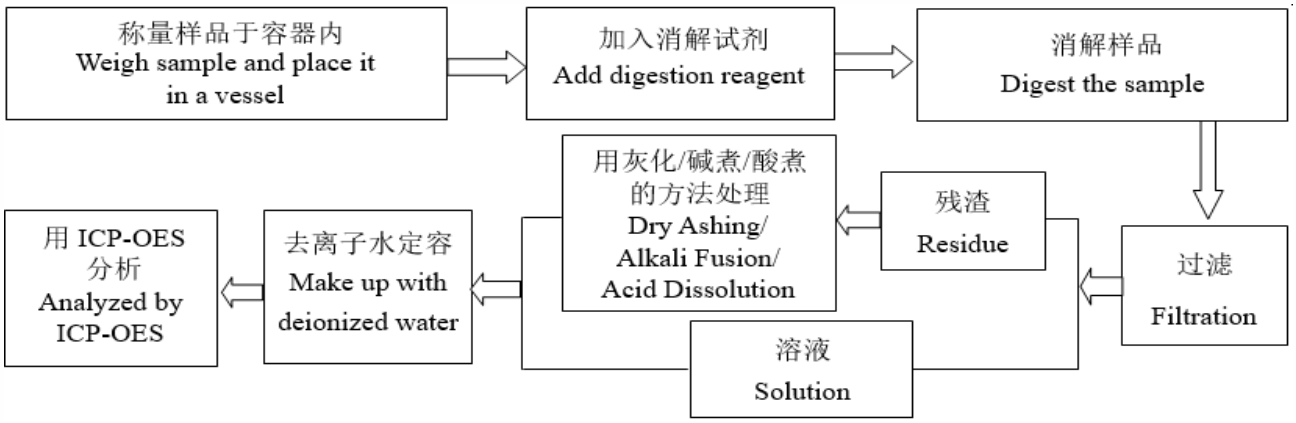
注释: **本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。**

Note: **The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.**

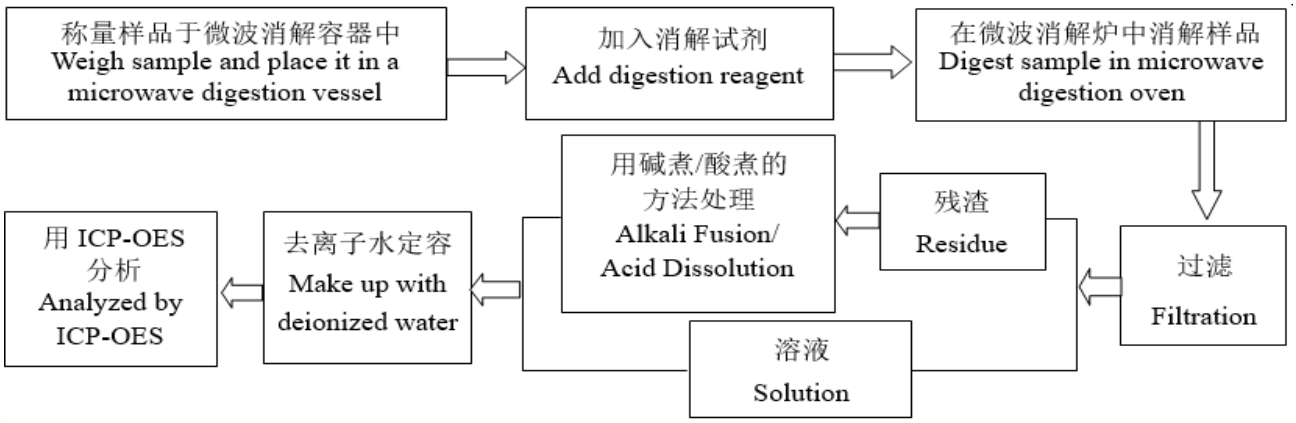
检测报告
Test Report

检测流程 Test Process

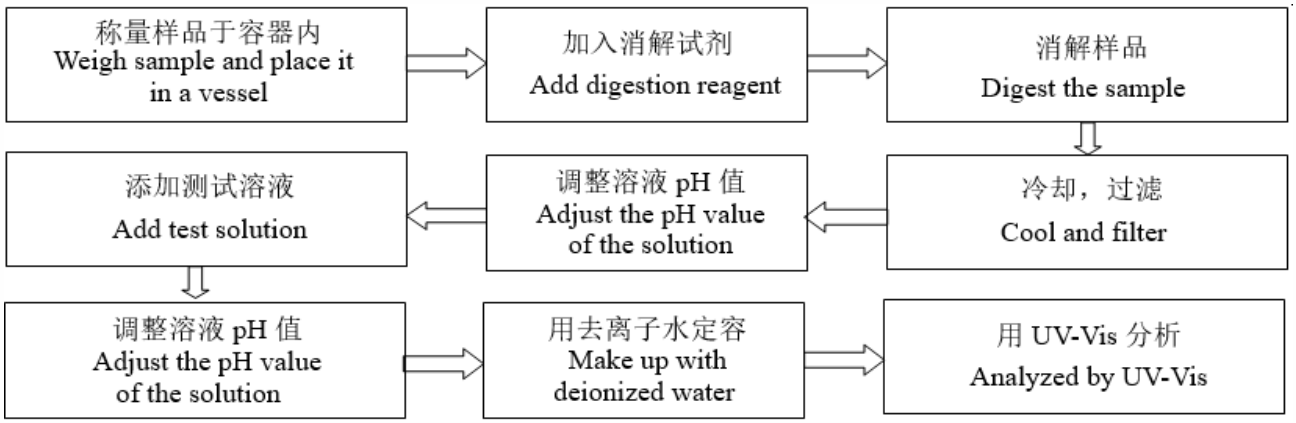
1. 铅(Pb), 镉(Cd), 铬(Cr)
Lead (Pb), Cadmium (Cd), Chromium (Cr)



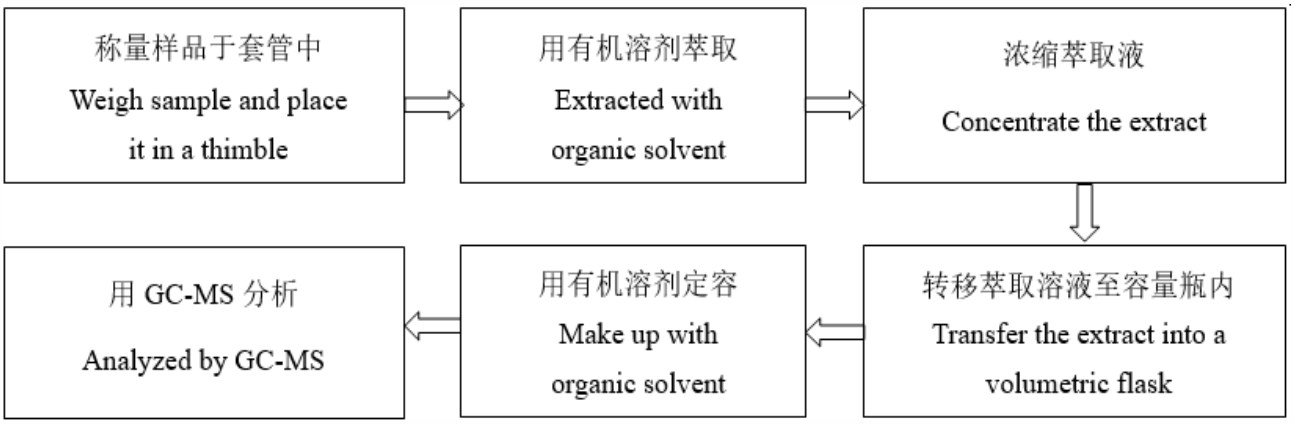
2. 汞(Hg)
Mercury (Hg)



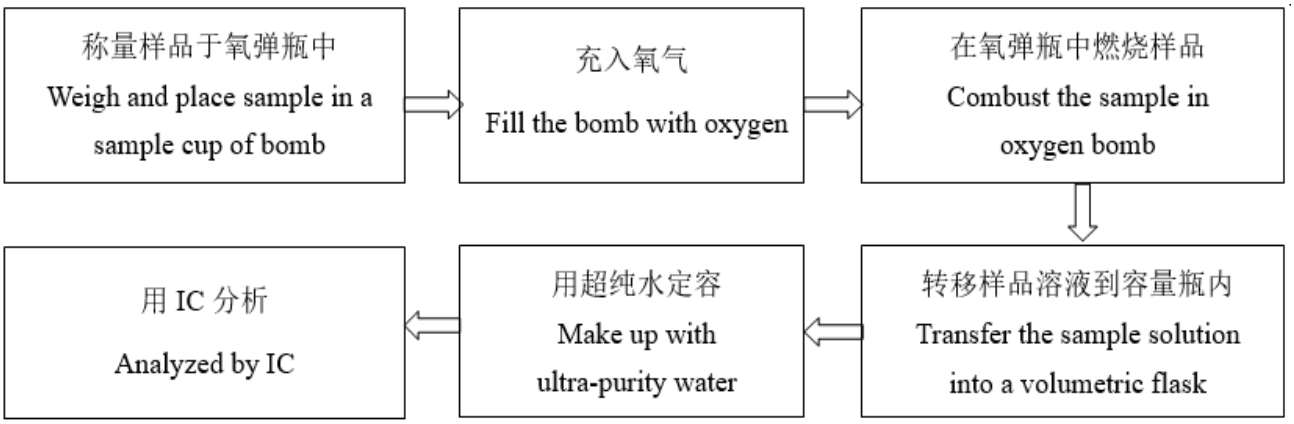
3. 六价铬(Cr(VI))
Hexavalent Chromium (Cr(VI))



4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)
Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



5. 氟(F)， 氯(Cl)， 溴(Br)， 碘(I)
Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



检测报告
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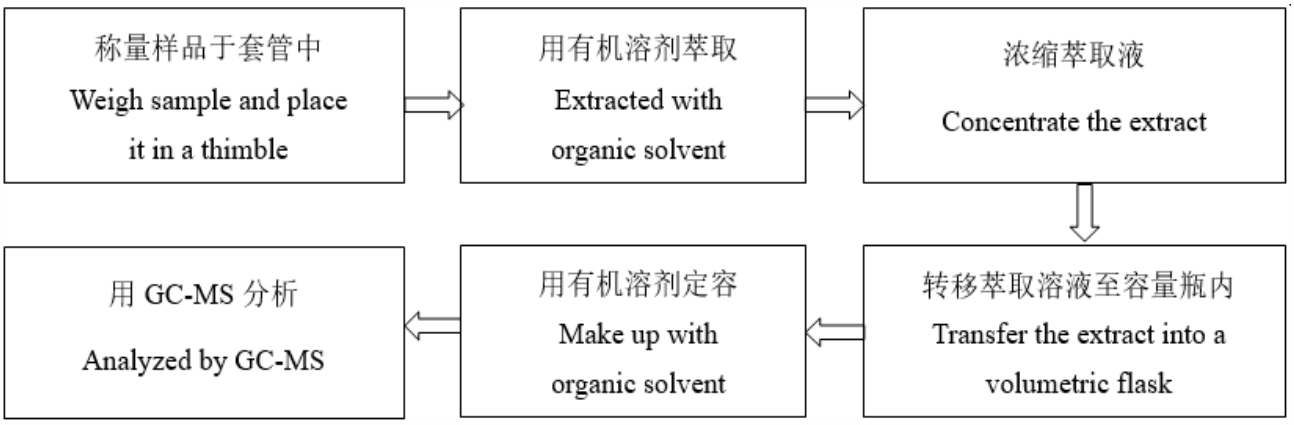
6. 邻苯二甲酸酯
Phthalates



检测报告
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样品图片
Photo(s) of the sample(s)

声明Statement：

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效；
   This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. 报告抬头公司名称及地址、样品及样品信息由申请者提供，申请者应对其真实性负责，CTI未核实其真实性；
   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. 本报告检测结果仅对受测样品负责；
   The result(s) shown in this report refer(s) only to the sample(s) tested;
4. 未经CTI书面同意，不得部分复制本报告；
   Without written approval of CTI, this report can’t be reproduced except in full;
5. 如检测报告中的英文内容与中文内容有差异，以中文为准。
   In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

报告结束
*** End of report ***

附录Appendix

客户参考信息Client Reference Information

NSR-9000M1/BK/ BK110/ BKM/ BK6M/ BK2/BK3/BK4/BK5/BK6
BKM2/FBK1T/FBK3/FBK5/FBK7/FBK9/FBK1/FBK2/FBK4/FBK6/FBK8/FBK10/ (F/BK)/ (F/BK3)/ (F/BK4)/
(F/BK5)/ (F/BK7)/ (F/BK8)/ (F/BK2) / (F/BK6) /(F/BKM-2)/ (F/BK3M) /(F/BKM68) /(F/BK6M) /(F/BK7M）/
(F/BK7M) /(F/BK8M)/(F/BK9M)/(F/BK5M)/(F/BKM(HS-1))/(F/BKM(HS-2))/(F/BKM(HS-3))/(F/BKM(HS-5))/
(F/BKM(HS-6))/(F/BKM(HS-7))/(F/BKM(HS-8))/(F/BKM(HS-9))/(F/BKM(HS-11))/(F/BKM(HS-12))/
(F/BKM(HS-15))/(F/BKM(HS-18))/(F/BKM(HS-16))/(F/BKM)/ (AF/BK)/ (AF/BKM) /
(AF/BKM2) /PET5BK/PET5BKM/PET5BKM-1/PET5BKM-2/PET5BKM-3/PET5BKM-5/PET5BKM/NS-411/
BK/BK2 /（F/BK）/BKM/(NSR-9000M1/BK(NS-411))/(NSR-9000M1/BK2(NS-411))+NSR-9000H1(FH1)/
(NSR-9000H1F)/(NSR-9000H1R)/HD70(HF)

声明Statement:

1. 附录内容由申请者提供，申请者应对其真实性负责，CTI未核实其真实性。
   The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. 附录内容为A2210481408102001E报告的补充。
   The Appendix Information is/are the supplement(s) for the Report A2210481408102001E.

检测报告
Test Report

报告编号 A2210042522101009E
Report No. A2210042522101009E

报告抬头公司名称 苏州海川电子材料有限公司
Company Name shown on Report SUZHOU HICHI EIECTRONIC MATERIAI.CO.,LTD.
地 址 苏州市相城区黄桥街道生田村工业坊路15号
Address NO.15 GONGYE FANG ROAD, SHENGTIAN VILLAGE, HUANGQIAO STREET, XIANGCHENG DISTRICT, SUZHOU CITY

以下测试之样品及样品信息由申请者提供并确认
The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称 Sample Name	抗金有机保护剂 Anti gold organic protective agent
样品型号 Part No.	CuCoat HT（x）II CuCoat HT（x）II
样品颜色 Color	无色液体 Colorless liquid
样品接收日期 Sample Received Date	2021.02.02 Feb. 2, 2021
样品检测日期 Testing Period	2021.02.02-2021.02.06 Feb. 2, 2021 to Feb. 6, 2021

检测要求 Test Requested
根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)，氟(F)，氯(Cl)，溴(Br)，碘(I)进行测试。
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), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I) in the submitted sample(s).

检测依据/检测结果 Test Method/Test Result(s) 请参见下页。 Please refer to the following page(s).

主 检 Tested by 邓华
批 准 Approved by 宋岩
宋岩
技术经理 Technical Manager

审 核 Reviewed by 张园园
日 期 Date 2021.02.06

苏州市华测检测技术有限公司
Centre Testing International(Suzhou) Co.,Ltd

No. R403807278
江苏省苏州市相城区澄阳路3286号
No.3286Chengyang Road, Xiangcheng District, Suzhou,Jiangsu

检测报告
Test Report

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead (Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium (Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017和/或IEC 62321-5:2013测试总铬含量 IEC 62321-7-2:2017 and/or determination of Total Chromium by IEC 62321-5:2013	UV-Vis/ICP-OES
多溴联苯 Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
氟 Fluorine (F)	参考EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考EN 14582:2016 Refer to EN 14582:2016	IC

检测报告
Test Report

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铅 Lead (Pb)	N.D.	2 mg/kg
镉 Cadmium (Cd)	N.D.	2 mg/kg
汞 Mercury (Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium (Cr(VI))	N.D.	8 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴联苯 Polybrominated Biphenyls (PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

检测报告
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检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate (DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate (BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate (DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP) CAS#:84-69-5	N.D.	50 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
氟 Fluorine (F)	N.D.	10 mg/kg
氯 Chlorine (Cl)	N.D.	10 mg/kg
溴 Bromine (Br)	N.D.	10 mg/kg
碘 Iodine (I)	N.D.	10 mg/kg

样品/部位描述 无色透明液体
Sample/Part Description Colorless transparent liquid

备注: 对于检测铅，镉，汞之样品已完全溶解。
-N.D. = 未检出（小于方法检出限）
-mg/kg = ppm = 百万分之一

Remark: The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL)
-mg/kg = ppm = parts per million

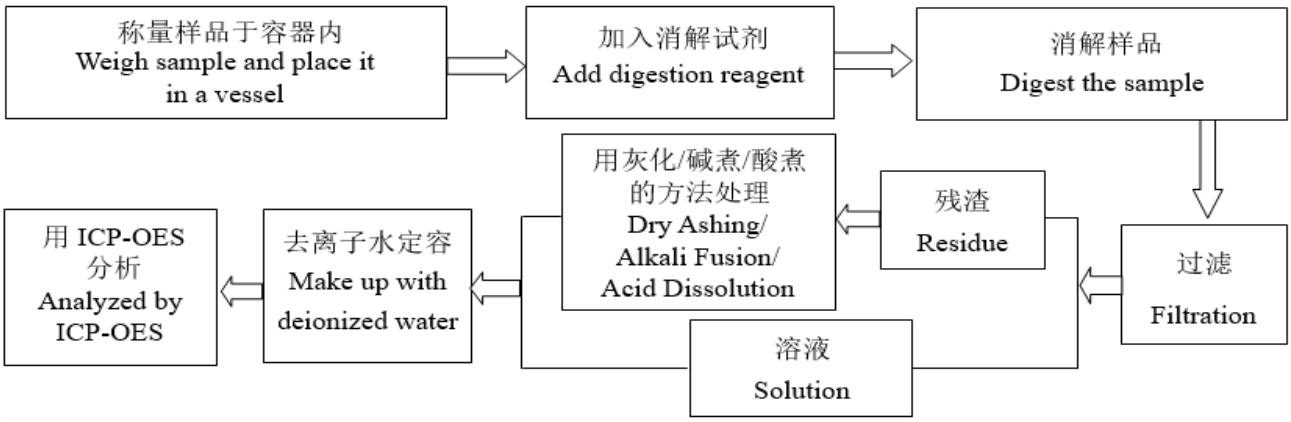
注释: 本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。
Note: The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.

检测报告
Test Report

检测流程 Test Process

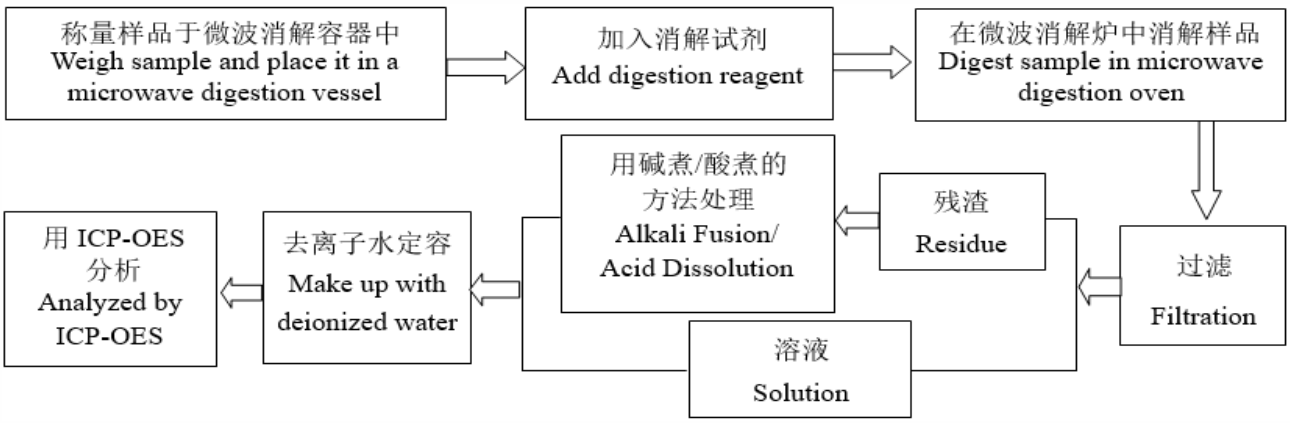
1. 铅(Pb)，镉(Cd)，铬(Cr)

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



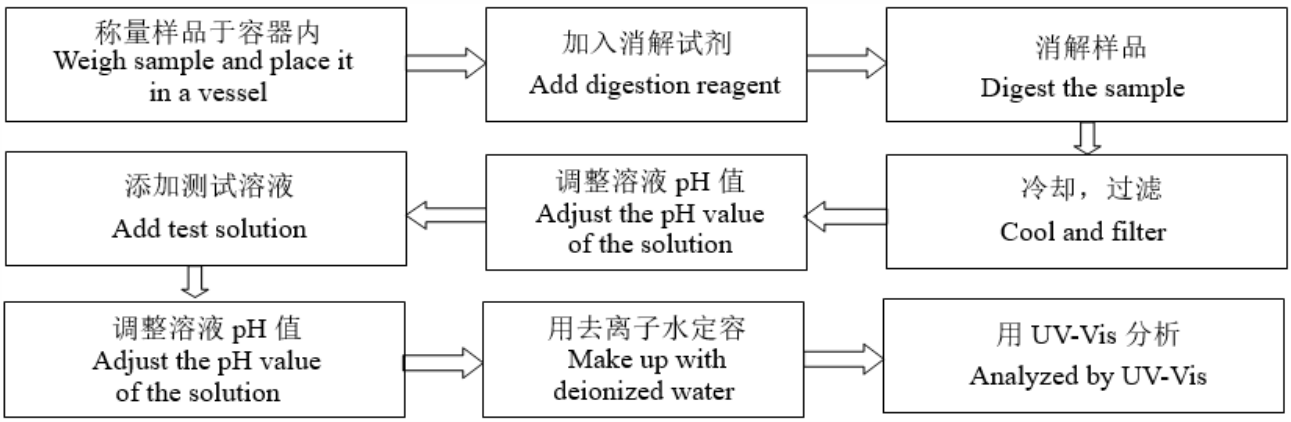
2. 汞(Hg)

Mercury (Hg)



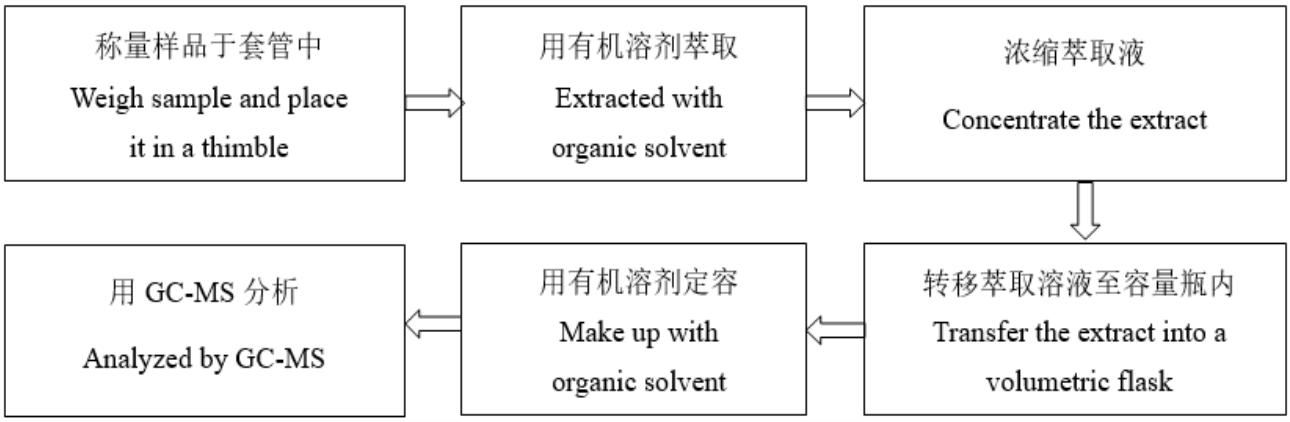
3. 六价铬(Cr(VI))

Hexavalent Chromium (Cr(VI))



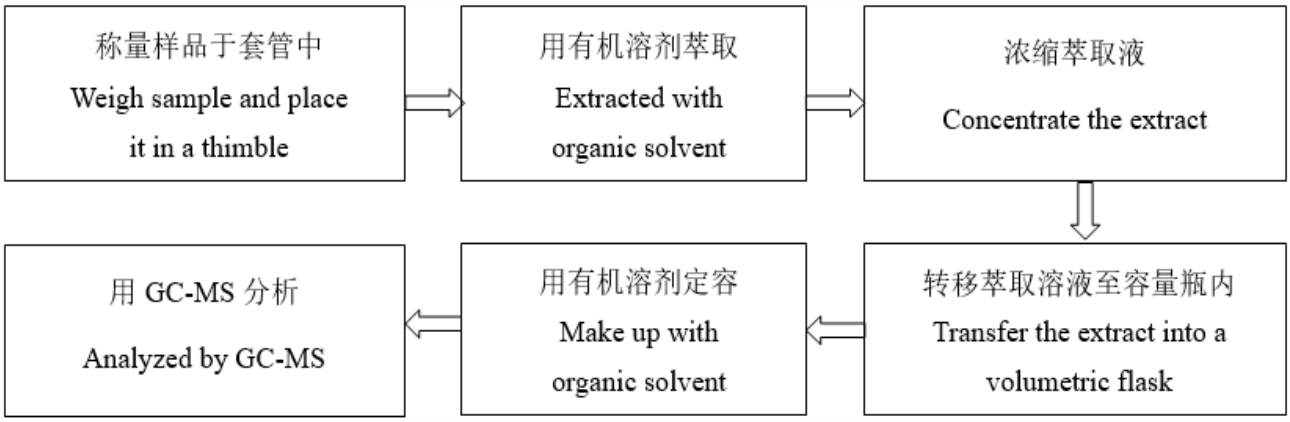
4. 多溴联苯(PBBs)， 多溴二苯醚(PBDEs)

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



5. 邻苯二甲酸酯(DBP， BBP， DEHP， DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



6. 氟(F)， 氯(Cl)， 溴(Br)， 碘(I)

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