(No.): ETR23605632 (Date): 12-Jul-2023 (Page): 1 of 21

Test Report

(EVERLIGHT ELECTRONICS CO., LTD.)
6-8 (NO. 6-8, ZHONGHUA RD., SHULIN DIST., NEW TAIPEI CITY 23860, TAIWAN)

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

BASIC INFORMATION	
Type of Product	DISPLAY
Supplier Company Name	EVERLIGHT
Address	NO.6-8, ZHONGHUA RD., SHULIN DIST., NEW TAIPEI CITY 23860, TAIWAN
Tel / Fax / Email	TEL:886-2685-6688 FAX:886-2685-6699 E-MAIL: allenchiang@everlight.com
Contact Person	Allen
EVERLIGHT REPORT NO	EVERLIGHT-DISPLAY SERIES (PCB Display) Sampling Product : D306SURWA/S530-A3/S451-SGS-12-Jul-2023
PRODUCT INFORMATION	
Product/component Sample description	˙ Instrument panels ˙ Digital readout displays
Quantity (numbers or weight)	1.9234 g
	ZS23041311
Country of Origin	China
TEST INFORMATION	
Sample preparation	CUTTING
Test Method	RoHS: IEC 62321, Halogen: BS EN 14582
MDL	Cd, Pb, Hg: 2 mg/kg, PBBs/PBDEs: 5 mg/kg, Halogen: 50 mg/kg

(Sample Submitted By) : (EVERLIGHT ELECTRONICS CO., LTD.)

==========

(Sample Receiving Date) : 30-Jun-2023
(Testing Period) : 30-Jun-2023 to 12-Jul-2023

(Test Results) : (Please refer to following pages).

PIN CODE: 1A705984

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(Test Requested : (1) RoHS 2011/65/EU Annex II (EU) 2015/863 , DBP, BBP, DEHP, DIBP (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

(2) PAHs (As specified by client, to test PAHs and other item(s).)

(Conclusion) : (1) , DBP, BBP, DEHP, DIBP RoHS 2011/65/EU Annex II (EU) 2015/863 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)

(2) (AfPS) GS PAHs 3 (Based upon the performed tests on the submitted sample(s), the test results of PAHs (15 items) comply with the limits of PAHs requirement (Category 3) Other consumer products as set by German Committee on Product Safety (AfPS) GS PAHs.)

(Test Part Description)

No.1 : (BODY)
No.2 : (PLATING LAYER OF SILVER COLORED METAL PIN)
No.3 : (BASE MATERIAL OF SILVER COLORED METAL PIN)
No.4 : ( ) (SILVER COLORED METAL PIN (INCLUDING THE PLATING LAYER))

(Test Results)

(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(Cd) (Cadmium (Cd))	IEC 62321-5: 2013 (With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	---	---	100
(Pb) (Lead (Pb))		mg/kg	2	n.d.	---	---	1000

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(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(Hg) (Mercury (Hg))	IEC 62321-4: 2013+ AMD1: 2017 (With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	---	---	1000
Cr(VI) (Hexavalent Chromium Cr(VI))	IEC 62321-7-2: 2017 - (With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.)	mg/kg	8	n.d.	---	---	1000
(Cd) (Cadmium (Cd))	IEC 62321-5: 2013 (IEC 62321-5: 2013 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	---	n.d.	---	100
(Pb) (Lead (Pb))		mg/kg	2	---	49.1	---	1000
(Hg) (Mercury (Hg))	IEC 62321-4: 2013+ AMD1: 2017 (IEC 62321-4: 2013+AMD1: 2017 application of modified digestion by surface etching, analysis was performed by ICP-OES.)	mg/kg	2	---	n.d.	---	1000
(Cd) (Cadmium (Cd))	IEC 62321-5: 2013 (With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.)	mg/kg	2	---	---	n.d.	100
(Pb) (Lead (Pb))		mg/kg	2	---	---	n.d.	1000
(Hg) (Mercury (Hg))	IEC 62321-4: 2013+ AMD1: 2017 (With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.)	mg/kg	2	---	---	n.d.	1000

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(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(Hexavalent Chromium) Cr(VI) (CAS No.: 18540-29-9) (#2)	IEC 62321-7-1: 2015 - (With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.)	µg/cm²	0.1	---	n.d.	n.d.	-
(Monobromobiphenyl)	IEC 62321-6: 2015 / (With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.)	mg/kg	5	n.d.	---	---	-
(Dibromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Tribromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Tetrabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Pentabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Hexabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Heptabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Octabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Nonabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Decabromobiphenyl)		mg/kg	5	n.d.	---	---	-
(Sum of PBBs)		mg/kg	-	n.d.	---	---	1000
(Monobromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Dibromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Tribromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Tetrabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Pentabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Hexabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Heptabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Octabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Nonabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Decabromodiphenyl ether)		mg/kg	5	n.d.	---	---	-
(Sum of PBDEs)		mg/kg	-	n.d.	---	---	1000

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(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(BBP) (Butyl benzyl phthalate (BBP))	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	1000
(DBP) (Dibutyl phthalate (DBP))	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	1000
(2-) (DEHP) (Di-(2-ethylhexyl) phthalate (DEHP))	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	1000
(DIBP) (Diisobutyl phthalate (DIBP))	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	1000
(DIDP) (Diisodecyl phthalate (DIDP)) (CAS No.: 26761-40-0, 68515-49-1)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DINP) (Diisononyl phthalate (DINP)) (CAS No.: 28553-12-0, 68515-48-0)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DNOP) (Di-n-octyl phthalate (DNOP)) (CAS No.: 117-84-0)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DNPP) (Di-n-pentyl phthalate (DNPP)) (CAS No.: 131-18-0)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DNHP) (Di-n-hexyl phthalate (DNHP)) (CAS No.: 84-75-3)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(2-) (DMEP) (Bis(2-methoxyethyl) phthalate (DMEP)) (CAS No.: 117-82-8)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DMP) (Dimethyl phthalate (DMP)) (CAS No.: 131-11-3)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-

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(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(DIOP) (Diisooctyl phthalate (DIOP)) (CAS No.: 27554-26-3)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(DNNP) (Di-n-nonyl phthalate (DNNP)) (CAS No.: 84-76-4)	IEC 62321-8: 2017 / (With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.)	mg/kg	50	n.d.	---	---	-
(HBCDD) (α- HBCDD, β- HBCDD, γ- HBCDD) (Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α- HBCDD, β- HBCDD, γ- HBCDD)) (CAS No.: 25637-99-4, 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	IEC 62321: 2008 / (With reference to IEC 62321: 2008, analysis was performed by GC/MS.)	mg/kg	5	n.d.	---	---	-
(F) (Fluorine (F)) (CAS No.: 14762-94-8)	BS EN 14582: 2016 (With reference to BS EN 14582: 2016, analysis was performed by IC.)	mg/kg	50	124	---	---	-
(Cl) (Chlorine (Cl)) (CAS No.: 22537-15-1)		mg/kg	50	315	---	---	-
(Br) (Bromine (Br)) (CAS No.: 10097-32-2)		mg/kg	50	5760	---	---	-
(I) (Iodine (I)) (CAS No.: 14362-44-8)		mg/kg	50	n.d.	---	---	-
(PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	CEN/TS 15968: 2010 (With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	---	---	-
(PFOA and its salts) (CAS No.: 335-67-1 and its salts)	CEN/TS 15968: 2010 (With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.)	mg/kg	0.01	n.d.	---	---	-
(Be) (Beryllium (Be)) (CAS No.: 7440-41-7)	US EPA 3052: 1996 (With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	---	---	-

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(Test Items)	(Method)	(Unit)	MDL	(Result)			(Limit)
				No.1	No.2	No.3	
(Polycyclic Aromatic Hydrocarbons) (PAHs)							
(a) (Benzo[a]pyrene) (CAS No.: 50-32-8)	AfPS GS 2019:01 PAK / (With reference to AfPS GS 2019:01 PAK, analysis was performed by GC/MS.)	mg/kg	0.2	n.d.	---	---	Δ
(e) (Benzo[e]pyrene) (CAS No.: 192-97-2)		mg/kg	0.2	n.d.	---	---	Δ
(Benzo[a]anthracene) (CAS No.: 56-55-3)		mg/kg	0.2	n.d.	---	---	Δ
(b) (Benzo[b]fluoranthene) (CAS No.: 205-99-2)		mg/kg	0.2	n.d.	---	---	Δ
(j) (Benzo[j]fluoranthene) (CAS No.: 205-82-3)		mg/kg	0.2	n.d.	---	---	Δ
(k) (Benzo[k]fluoranthene) (CAS No.: 207-08-9)		mg/kg	0.2	n.d.	---	---	Δ
(Chrysene) (CAS No.: 218-01-9)		mg/kg	0.2	n.d.	---	---	Δ
(Dibenzo[a,h]anthracene) (CAS No.: 53-70-3)		mg/kg	0.2	n.d.	---	---	Δ
(Benzo[g,h,i]perylene) (CAS No.: 191-24-2)		mg/kg	0.2	n.d.	---	---	Δ
(Indeno[1,2,3-c,d]pyrene) (CAS No.: 193-39-5)		mg/kg	0.2	n.d.	---	---	Δ
(Anthracene) (CAS No.: 120-12-7)		mg/kg	0.2	n.d.	---	---	Δ
(Fluoranthene) (CAS No.: 206-44-0)		mg/kg	0.2	n.d.	---	---	Δ
(Phenanthrene) (CAS No.: 85-01-8)		mg/kg	0.2	n.d.	---	---	Δ
(Pyrene) (CAS No.: 129-00-0)		mg/kg	0.2	n.d.	---	---	Δ
(Naphthalene) (CAS No.: 91-20-3)		mg/kg	0.2	n.d.	---	---	Δ
15 (Sum of 15 PAHs)		mg/kg	-	n.d.	---	---	Δ

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(Test Items)	(Method)	(Unit)	MDL	(Result) No.4	(Limit)
	US EPA 3050B: 1996 (With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.)	mg/kg	2	n.d.	-

(Note)
1. mg/kg = ppm 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit ( )
3. n.d. = Not Detected ( ) ; MDL / Less than MDL
4. "-" = Not Regulated ( )
5. "---" = Not Conducted ( )
6. (PFOS and its salts including) :
   CAS No.: 1763-23-1, 2795-39-3, 29457-72-5, 29081-56-9, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7, 91036-71-4, 4021-47-0 and others.
7. (PFOA and its salts including) :
   CAS No.: 335-67-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0, 3825-26-1 and others.
8. (#2) =
   a. 0.13 µg/cm² . / 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. n.d. (0.10 µg/cm²) . / 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. 0.10 0.13 µg/cm² . / The result between 0.10 µg/cm² and
9.

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Remark

Δ (AfPS): GS PAHs

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

(Parameter)	1 (Category 1)	2 (Category 2)		3 (Category 3)	
	(30) 2009/48/EC 3 (Materials intended to be placed in the mouth, or materials in toys (Directive 2009/48/EC) or articles for children up to 3 years of age with intended long-term skin contact (> 30 seconds))	1 30 ( ) (Materials that are not in Category 1, with intended or foreseeable long-term skin contact (> 30 seconds) or short-term repetitive contact with the skin)		1 2 30 ( )(Materials not covered by Category 1 or 2, with intended or foreseeable short-term skin contact (30 seconds))	
		a. 14 (Use by children under 14)	b. (Other consumer products)	a. 14 (Use by children under 14)	b. (Other consumer products)

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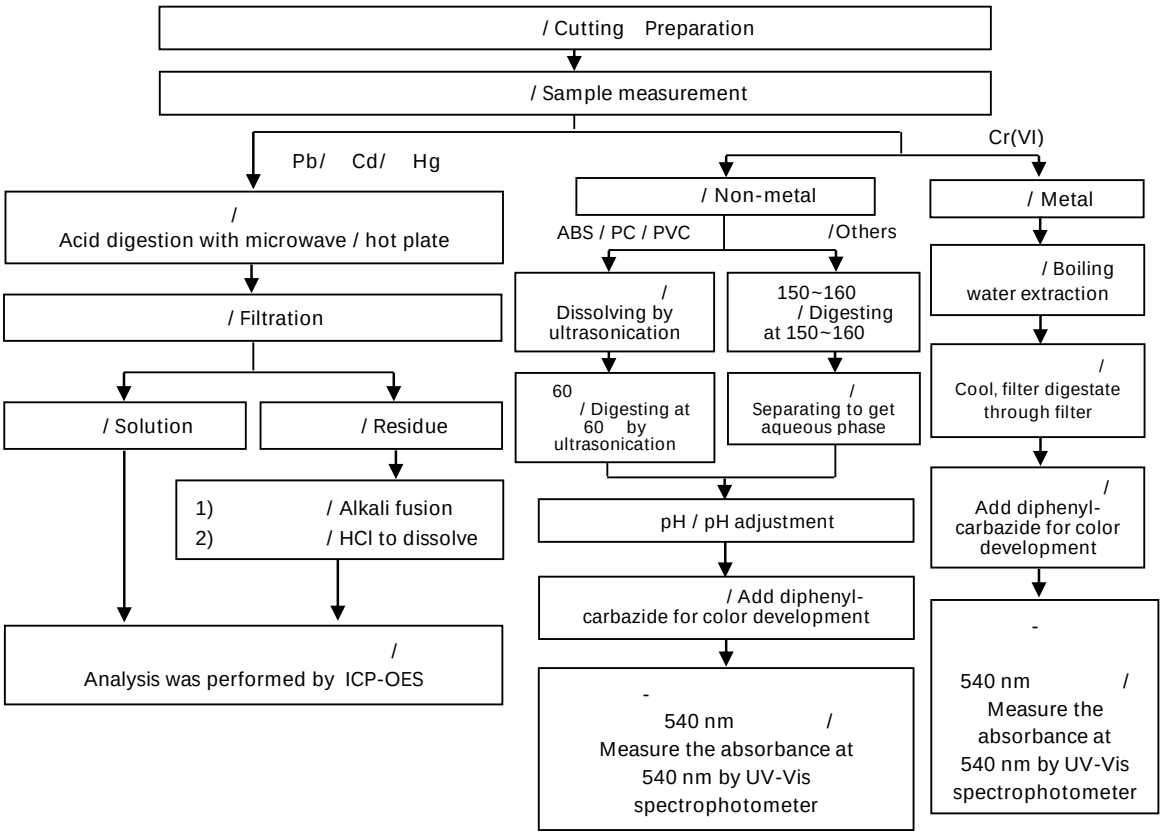
/ Analytical flow chart of heavy metal

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



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/ Flow chart of s

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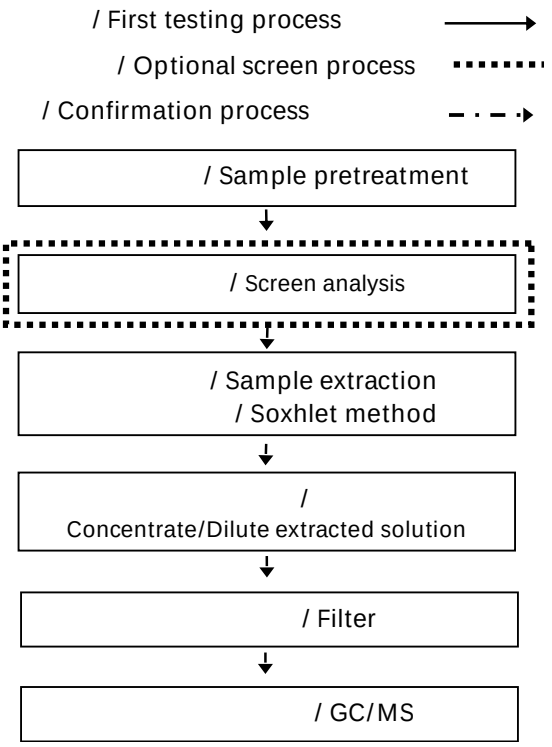
/ / Analytical flow chart - PBBs/PBDEs



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/ Analytical flow chart - Phthalate

/Test method: IEC 62321-8

/ /
Sample pretreatment/separation

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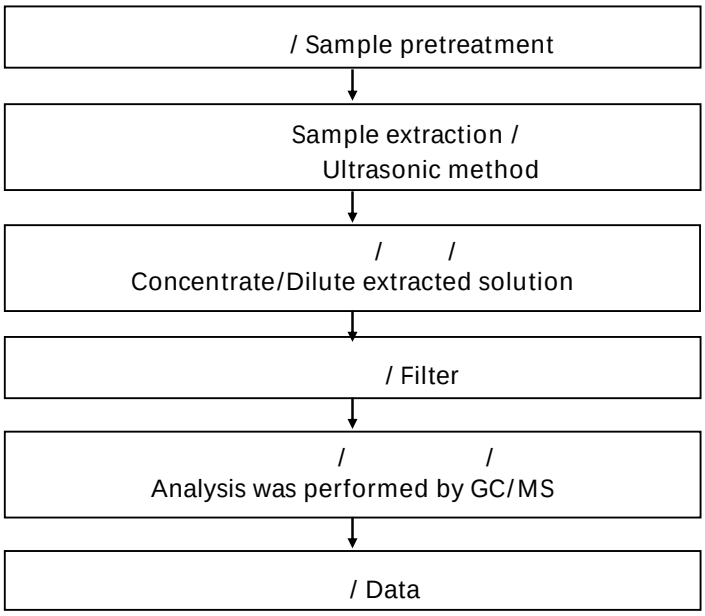
/ Analytical flow chart - HBCDD



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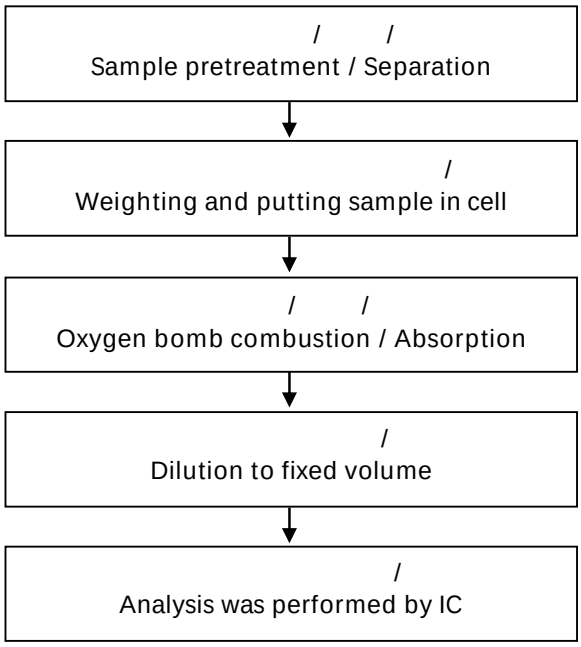
/ Analytical flow chart - Halogen



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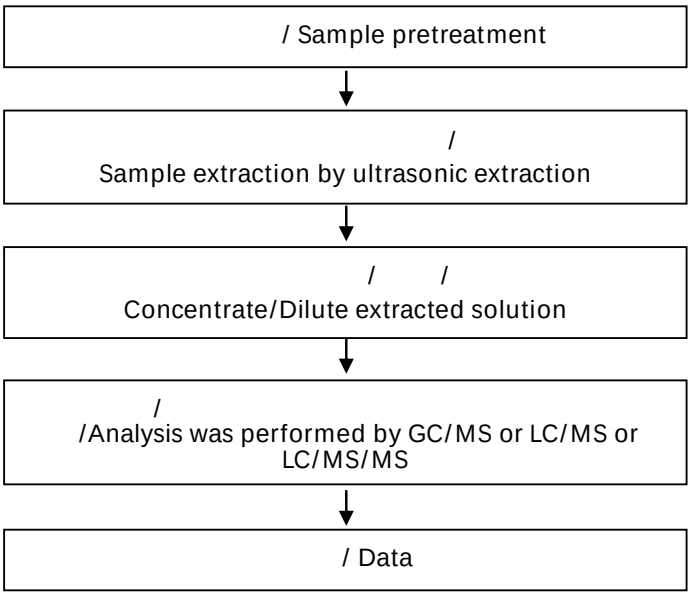
(/ /) / Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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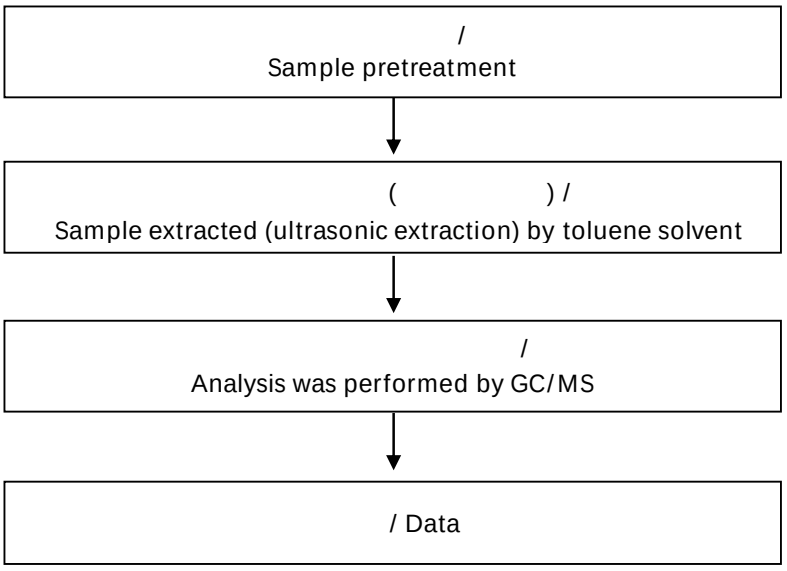
/

Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)



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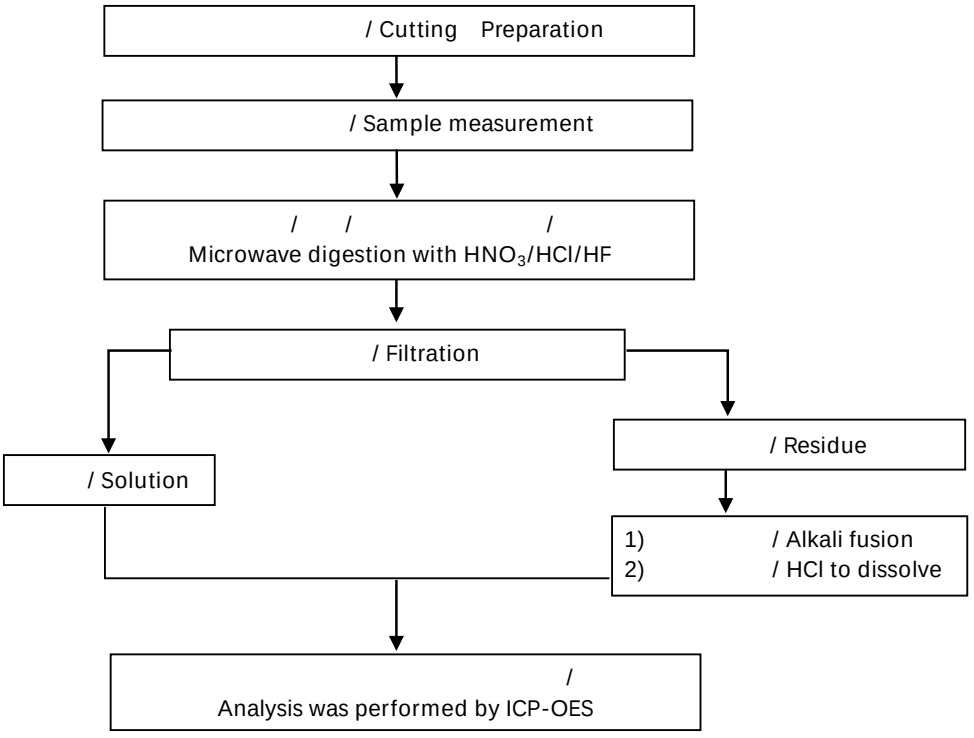
( ) / Analytical flow chart of elements (Heavy metal included)

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

/Reference method US EPA 3051A US EPA 3052



* US EPA 3051A / US EPA 3051A method does not add HF.

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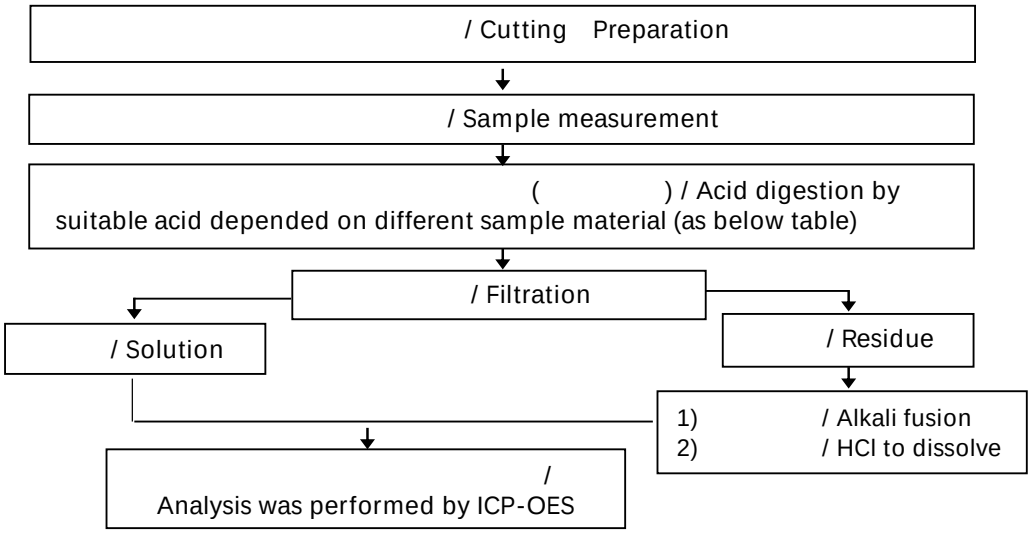
ICP-OES

(Flow chart of digestion for the elements analysis performed by ICP-OES)

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



, , , / Steel, copper, aluminum, solder	, , , , / Aqua regia, HNO_3, HCl, HF, H_2O_2
/ Glass	, / HNO_3,HF
, , , / Gold, platinum, palladium, ceramic	/ Aqua regia
/ Silver	/ HNO_3
/ Plastic	, , , / H_2SO_4, H_2O_2, HNO_3, HCl
/ Others	/ Added appropriate reagent to total digestion

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

ETR23605632_NO.2

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ETR23605632 NO.4

** (End of Report) **