



Test Report

No.: ETR21106958M01

Date: 05-Feb-2021

Page: 1 of 10

YANNIS ELECTRONICS CO., LTD.

8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

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

Sample Name : SMD TYPE CRYSTAL / SMD TYPE CRYSTAL OSCILLATORS / SMD TYPE CRYSTAL FILTER

Style/Item No. : PLEASE REFER TO PAGE 2

Sample Receiving Date : 29-Jan-2021

Testing Period : 29-Jan-2021 to 05-Feb-2021

Test Requested : Testing item(s) is/are specified by client. Please refer to result table for testing item(s).

Test Results : Please refer to following pages.

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



PIN CODE: 5121103A

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Test Report

No.: ETR21106958M01

Date: 05-Feb-2021

Page: 2 of 10

YANNIS ELECTRONICS CO., LTD.

8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

Style/Item No. :

1	Crystal	X11 , X21, X22 , X32 , X42 , MJ_ , MF_ , MQ_ , X2012 , X3215 , SSG
2	Crystal Oscillators	H21 , H22, H__22_ , H32 , H__32_ , H53 , H__53_ , H__57_ , H__538 , H__578 , SWO , HM_ , QF_ , OC_
3	VCXO	G__22_ , G__32_ , G__53_ , G__57_ , G__538 , G__578
4	VCTCXO	ME32T , (V)M21, (V)M22_ , (V)M32_ , (V)M__32_ , (V)M53_ , (V)M__57_ , (V)MJF538, (V)MQF__ , (V)M__
5	Crystal Filter	_MQ_ , SAW

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Test Report

No.: ETR21106958M01

Date: 05-Feb-2021

Page: 3 of 10

YANNIS ELECTRONICS CO., LTD.

8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

Test Part Description

No.1 : MIXED ALL PARTS

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)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.
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)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.
Monobromobiphenyl	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.
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.

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Test Report

No.: ETR21106958M01

Date: 05-Feb-2021

Page: 4 of 10

YANNIS ELECTRONICS CO., LTD.

8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

Test Item(s)	Method	Unit	MDL	Result
				No.1
Butyl benzyl phthalate (BBP) (CAS No.: 85-68-7)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.
Dibutyl phthalate (DBP) (CAS No.: 84-74-2)		mg/kg	50	n.d.
Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.: 117-81-7)		mg/kg	50	n.d.
Diisobutyl phthalate (DIBP) (CAS No.: 84-69-5)		mg/kg	50	n.d.
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Chlorine (Cl) (CAS No.: 22537-15-1)		mg/kg	50	n.d.
Bromine (Br) (CAS No.: 10097-32-2)		mg/kg	50	n.d.
Iodine (I) (CAS No.: 14362-44-8)		mg/kg	50	n.d.
PFOS and its salts (CAS No.: 1763-23-1 and its salts)	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)		mg/kg	0.01	n.d.

Note :

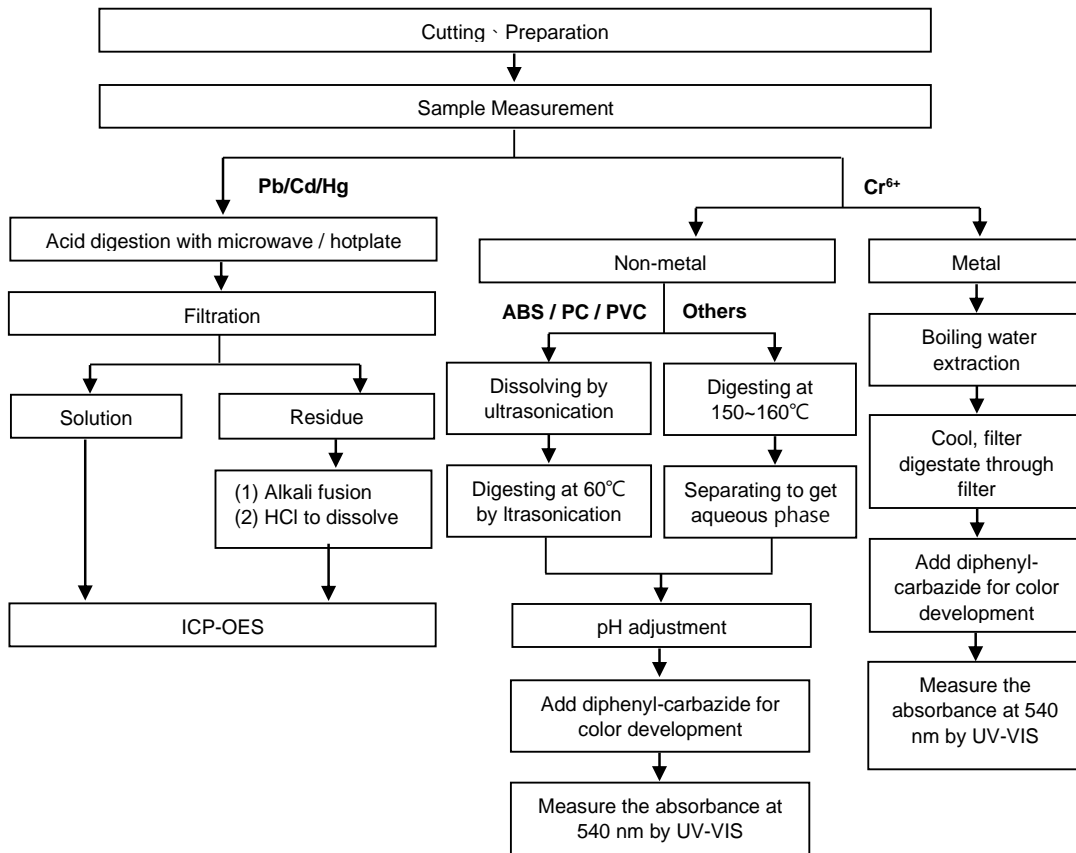
1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated
5. PFOS and its salts including :
CAS No.: 29081-56-9, 2795-39-3, 29457-72-5, 70225-14-8, 56773-42-3, 251099-16-8, 307-35-7.
6. PFOA and its salts including :
CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
7. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.
8. This is the additional test report of ETR21106958.

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Analytical flow chart of Heavy Metal

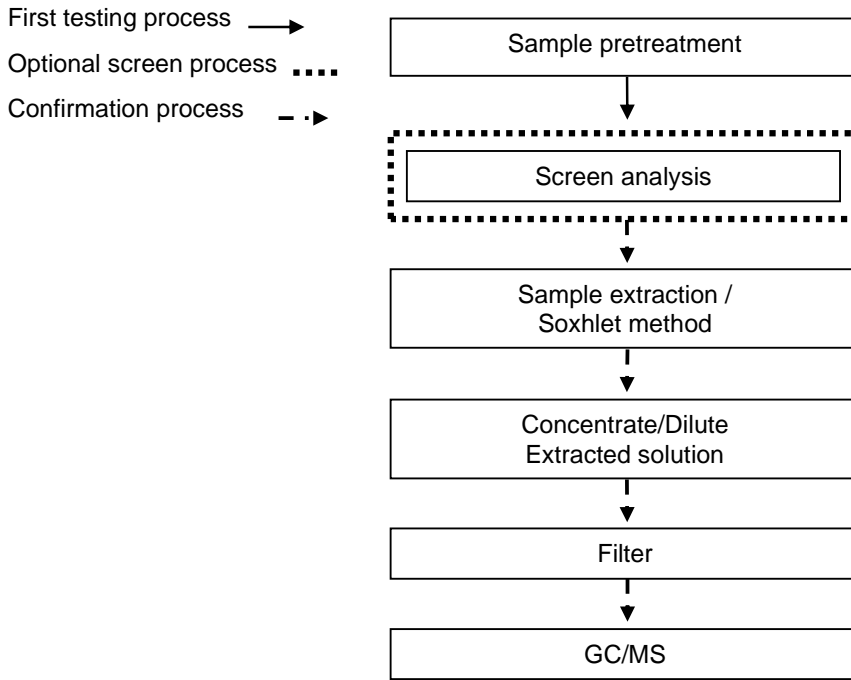
These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr⁶⁺ test method excluded)



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Analytical flow chart – PBBs / PBDEs



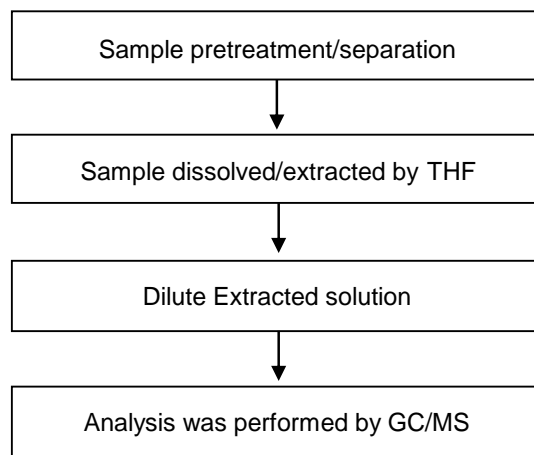
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8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

Analytical flow chart - Phthalate

【Test method: IEC 62321-8】

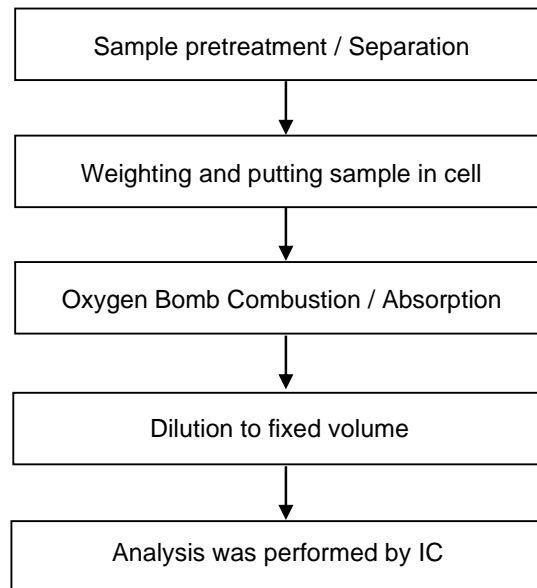


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8F-6, NO. 237, SEC. 1, DATONG RD., XIZHI DIST., NEW TAIPEI CITY 221 TAIWAN

Analytical flow chart - Halogen

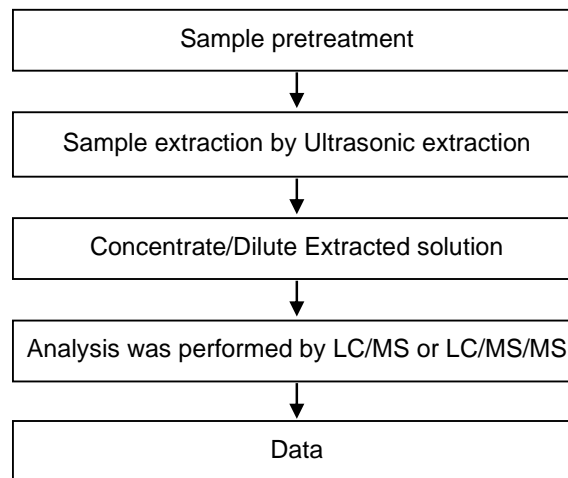


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Analytical flow chart - PFOA/PFOS



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Test Report

No.: ETR21106958M01

Date: 05-Feb-2021

Page: 10 of 10

YANNIS ELECTRONICS CO., LTD.

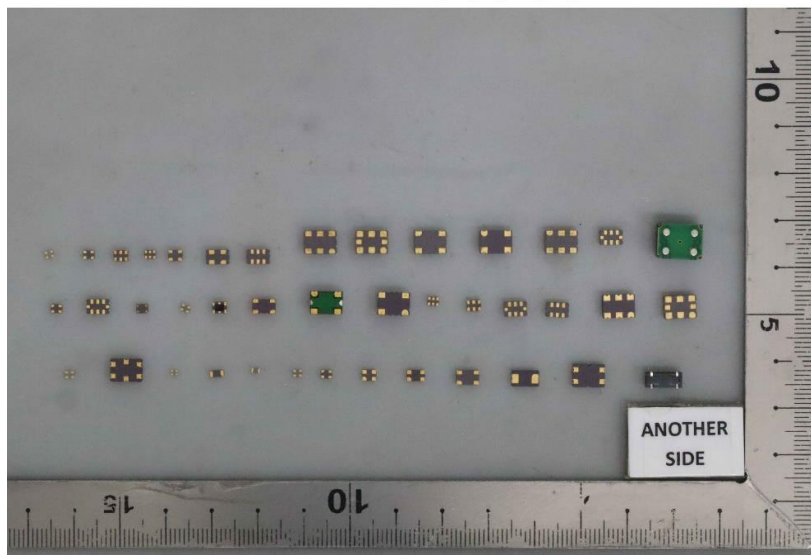
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* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR21106958



ETR21106958



** End of Report **

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