

Test Report No.: EKR21302094 Date: 30-Mar-2021 Page: 1 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD

1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

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

Sample Submitted By : TANAKA ELECTRONICS TAIWAN CO.,LTD

24-Mar-2021

Sample Name : CLR-1A PLUS_ATV

Sample Receiving Date :

Testing Period : 24-Mar-2021 to 30-Mar-2021

Test Requested : (1) 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) Please refer to next pages for the other item(s).

Test Results: Please refer to following pages.

Conclusion: 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.

Ray Chang Ph.D./Department wanager Signed for and on behalf SGS TAIWAN LTD.
Chemical Laboratory-Kaohsiung



PIN CODE: 42B2EE0



No.: EKR21302094 Date: 30-Mar-2021 Page: 2 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Test Part Description

No.1 : SILVER CLR-1A PLUS_ATV

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd) (CAS No.: 7440-43-9)	With reference to IEC 62321-5: 2013,	mg/kg	2	n.d.	100
Lead (Pb) (CAS No.: 7439-92-1)	analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Mercury (Hg) (CAS No.: 7439-97-6)	With reference to IEC 62321-4: 2013+	mg/kg	2	n.d.	1000
	AMD1: 2017, analysis was performed				
	by ICP-OES.				
Hexavalent Chromium Cr(VI) (CAS No.:	With reference to IEC 62321-7-1:	μg/cm²	0.1	n.d.	-
18540-29-9) (#2)	2015, analysis was performed by UV-				
	VIS.				
Monobromobiphenyl		mg/kg	5	n.d.	-
Dibromobiphenyl		mg/kg	5	n.d.	-
Tribromobiphenyl		mg/kg	5	n.d.	-
Tetrabromobipenyl		mg/kg	5	n.d.	-
Pentabromobiphenyl	With reference to IEC 62321-6: 2015,	mg/kg	5	n.d.	-
Hexabromobiphenyl	analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Heptabromobiphenyl	dilarysis was performed by Ge/Wis.	mg/kg	5	n.d.	-
Octabromobiphenyl		mg/kg	5	n.d.	-
Nonabromobiphenyl		mg/kg	5	n.d.	ı
Decabromobiphenyl		mg/kg	5	n.d.	ı
Sum of PBBs		mg/kg	ı	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	With reference to IEC 62321-6: 2015,	mg/kg	5	n.d.	-
Hexabromodiphenyl ether	analysis was performed by GC/MS.	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	1	n.d.	1000



No.: EKR21302094 Date: 30-Mar-2021 Page: 3 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Antimony (Sb) (CAS No.: 7440-36-0)	With reference to US EPA 3052: 1996,	mg/kg	2	n.d.	-
Beryllium (Be) (CAS No.: 7440-41-7)	analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Arsenic (As) (CAS No.: 7440-38-2)		mg/kg	2	n.d.	-
Polychlorinated biphenyls (PCBs)		mg/kg	0.5	n.d.	-
Polychlorinated naphthalene (PCNs)	With reference to US EPA 3550C:	mg/kg	5	n.d.	=
Polychlorinated terphenyls (PCTs)	2007, analysis was performed by	mg/kg	0.5	n.d.	-
Short Chain Chlorinated Paraffins(C10-C13) (SCCP) (CAS No.: 85535-84-8)	GC/MS.	mg/kg	50	n.d.	-
Fluorine (F) (CAS No.: 14762-94-8)		mg/kg	50	n.d.	-
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016,	mg/kg	50	n.d.	=
Bromine (Br) (CAS No.: 10097-32-2)	analysis was performed by IC.	mg/kg	50	n.d.	=
lodine (I) (CAS No.: 14362-44-8)		mg/kg	50	n.d.	-
Triphenyl tin (TPhT)	With reference to ISO 17353: 2004,	mg/kg	0.03	n.d.	-
Dibutyl tin (DBT)		mg/kg	0.03	n.d.	-
Dioctyl tin (DOT)	analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	=
Tributyl tin (TBT)		mg/kg	0.03	n.d.	=
Bis(tributyltin) oxide (TBTO) (CAS No.: 56-35-9)	Calculated from the result of Tributyl Tin (TBT).	mg/kg	0.03▲	n.d.	-
Perfluorooctane sulfonate (PFOS) and it's salt (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.	-
Perfluorooctanoic acid (PFOA) and it's salt (CAS No.: 335-67-1 and its salts)		mg/kg	0.01	n.d.	-
Butyl benzyl phthalate (BBP) (CAS No.: 85-68-7)		mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP) (CAS No.: 84-74-2)		mg/kg	50	n.d.	1000
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)		mg/kg	50	n.d.	-
Di-(2-ethylhexyl) phthalate (DEHP) (CAS No.: 117-81-7)		mg/kg	50	n.d.	1000



No.: EKR21302094 Date: 30-Mar-2021 Page: 4 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Diisobutyl phthalate (DIBP) (CAS No.: 84-69-5)		mg/kg	50	n.d.	1000
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))	With reference to IEC 62321: 2008, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Polyvinyl chloride (PVC)	With reference to ASTM E1252: 2013, analysis was performed by FT-IR and Flame Test.	**	-	Negative	-



No.: EKR21302094 Date: 30-Mar-2021 Page: 5 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD

1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

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. **= Qualitative analysis (No Unit)
- 6. Negative = Undetectable; Positive = Detectable
- 7. 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.
- 8. PFOA and its salts including:
 - CAS No.: 3825-26-1, 335-95-5, 2395-00-8, 335-93-3, 335-66-0.
- 9. (#2) =
 - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μ g/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 μ g/cm²). The coating is considered a non-Cr(VI) based coating
 - c. The result between 0.10 μ g/cm² and 0.13 μ g/cm² is considered to be inconclusive unavoidable coating variations may influence the determination.
- 10. ▲ : The MDL was evaluated for element / tested substance.

Conversion Formula : $AX = A \times F$

AX	Α	F
Bis(tributyltin)oxide (TBTO)	Tributyl Tin (TBT)	1.024

Parameter Conversion Table: https://eecloud.sgs.com/Region_TW/DocDownload.aspx#otherDoc

11. The statement of compliance conformity is based on comparison of testing results and limits.

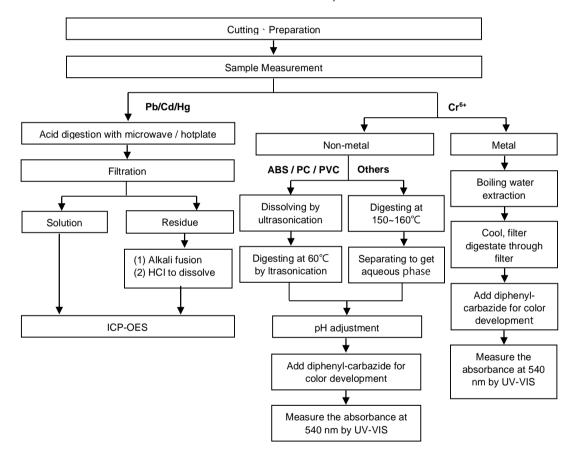


No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

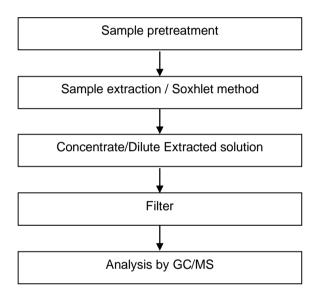
Page: 6 of 16



No.: EKR21302094 Date: 30-Mar-2021 Page: 7 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

PBB/PBDE analytical FLOW CHART





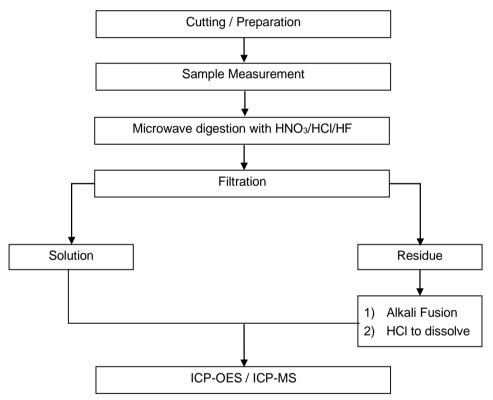
No.: EKR21302094 Date: 30-Mar-2021 Page: 8 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart of Heavy Metal

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

[Reference method: US EPA 3051 \ US EPA 3052]



* US EPA 3051 method does not add HF.

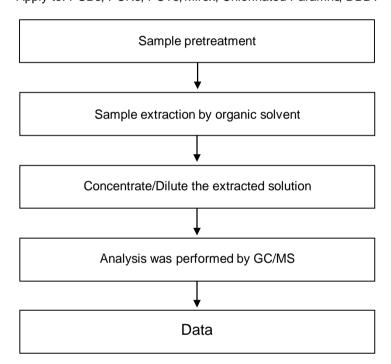


No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart

* Apply to: PCBs, PCNs, PCTs, Mirex, Chlorinated Paraffins, DBBT



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

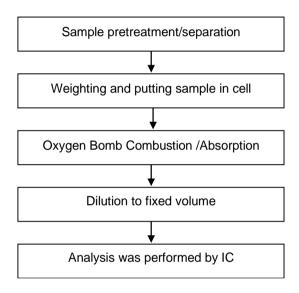
Page: 9 of 16



No.: EKR21302094 Date: 30-Mar-2021 Page: 10 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart of Halogen

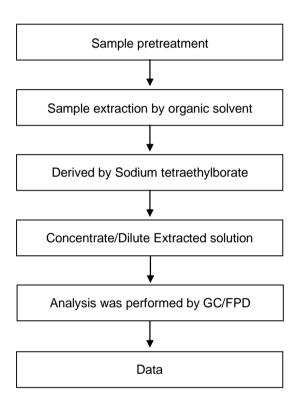




No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart - Organic-Tin



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

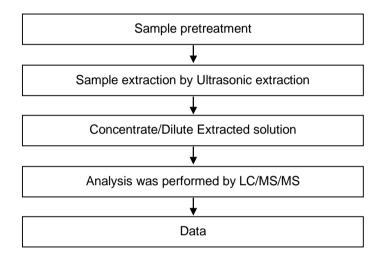
Page: 11 of 16



No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart - PFOA/PFOS



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 12 of 16

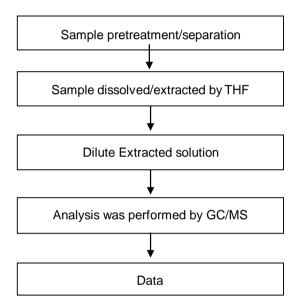


No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart of phthalate content

[Test method: IEC 62321-8]



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

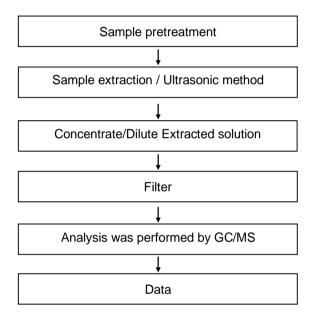
Page: 13 of 16



No.: EKR21302094 Date: 30-Mar-2021 Page: 14 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Analytical flow chart - HBCDD





No.: EKR21302094 Date: 30-Mar-2021 Page: 15 of 16

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

Sample pre-treatment Flame test Sample analyzed by FTIR Check wave-number of C-Cl bonding Data

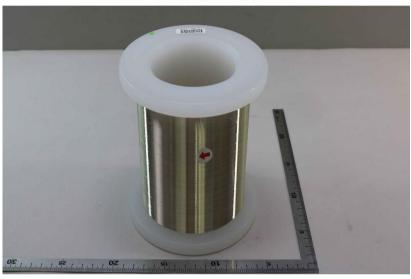


No.: EKR21302094 Date: 30-Mar-2021

TANAKA ELECTRONICS TAIWAN CO.,LTD 1TH FLOOR FINAL TEST BUILDING NO.550.SEC 1.ZHONGHUA RD.ZHINGLI DISTRICT TAOYUAN CITY 32016,TAIWAN R.O.C.

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

EKR21302094



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 16 of 16