

No.: EKR22900971 Date: 22-Sep-2022

PANASONIC INDUSTRY CO., LTD.

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

Sample Submitted By : PANASONIC INDUSTRY CO., LTD.
Sample Name : EPOXY MOLDING COMPOUND

60, KITASHINKAI, HASEDASHI, YOKKAICHI, MIE, 510-8560, JAPAN

Style/Item No. : CV8715 SERIES

Sample Receiving Date : 16-Sep-2022

Testing Period : 16-Sep-2022 to 22-Sep-2022

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 : (1) 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./Departmen Manager Signed for and on behalf SGS TAIWAN LTD. Chemical Laboratory-Kaohsiung



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PIN CODE: 98814A9A



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PANASONIC INDUSTRY CO., LTD. 60, KITASHINKAI, HASEDASHI, YOKKAICHI, MIE, 510-8560, JAPAN

Test Part Description

No.1 : BLACK LUMP

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, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb) (CAS No.: 7439-92-1)	With reference to IEC 62321-5: 2013,	mg/kg	2	n.d.	1000
	analysis was performed by ICP-OES.				
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 62321-7-2:	mg/kg	8	n.d.	1000
18540-29-9)	2017, analysis was performed by UV-				
	VIS.				
Monobromobiphenyl		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	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	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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PANASONIC INDUSTRY CO., LTD. 60, KITASHINKAI, HASEDASHI, YOKKAICHI, MIE, 510-8560, JAPAN

Test Item(s)	Method	Unit	MDL	Result No.1	Limit
Antimony (Sb) (CAS No.: 7440-36-0)	With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Beryllium (Be) (CAS No.: 7440-41-7)	With reference to US EPA 3052: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Polychlorinated biphenyls (PCBs)	With reference to US EPA 3550C:	mg/kg	0.5	n.d.	-
Polychlorinated naphthalene (PCNs)	2007, analysis was performed by	mg/kg	5	n.d.	-
Polychlorinated terphenyls (PCTs)	GC/MS.	mg/kg	0.5	n.d.	-
Short Chain Chlorinated Paraffins(C10-C13) (SCCP) (CAS No.: 85535-84-8)	With reference to ISO 18219: 2015, analysis was performed by 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	88.2	-
Bromine (Br) (CAS No.: 10097-32-2)	analysis was performed by IC.	mg/kg	50	n.d.	-
lodine (I) (CAS No.: 14362-44-8)	1 1 1	mg/kg	50	n.d.	-
Tributyl tin (TBT)		mg/kg	0.03	n.d.	-
Triphenyl tin (TPT)	With reference to ISO 17353: 2004,	mg/kg	0.03	n.d.	-
Dibutyl tin (DBT)	analysis was performed by GC/FPD.	mg/kg	0.03	n.d.	-
Dioctyl tin (DOT)		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.	-
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.	-
Perfluorooctanoic acid (PFOA) and it's salt (CAS No.: 335-67-1 and its salts)		mg/kg	0.01	n.d.	=
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	-



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Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Butyl benzyl phthalate (BBP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
85-68-7)	analysis was performed by GC/MS.				
Dibutyl phthalate (DBP) (CAS No.: 84-	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
74-2)	analysis was performed by GC/MS.				
Diisodecyl phthalate (DIDP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
26761-40-0, 68515-49-1)	analysis was performed by GC/MS.				
Diisononyl phthalate (DINP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
28553-12-0, 68515-48-0)	analysis was performed by GC/MS.				
Di-(2-ethylhexyl) phthalate (DEHP)	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
(CAS No.: 117-81-7)	analysis was performed by GC/MS.				
Di-n-octyl phthalate (DNOP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	-
117-84-0)	analysis was performed by GC/MS.				
Diisobutyl phthalate (DIBP) (CAS No.:	With reference to IEC 62321-8: 2017,	mg/kg	50	n.d.	1000
84-69-5)	analysis was performed by GC/MS.				

Note:

- 1. mg/kg = ppm; 0.1wt% = 0.1% = 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.: 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.

8. 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.

9. ▲ : The MDL was evaluated for element / tested substance.

Conversion Formula : $AX = A \times F$

AX	Α	F	
Bis(tributyltin)oxide (TBTO)	Tributyl Tin (TBT)	1.0276	

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

10. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule (w=0) stated in ILAC-G8:09/2019. According to this rule, the judgement of conformity is based on the comparing test results with limits.

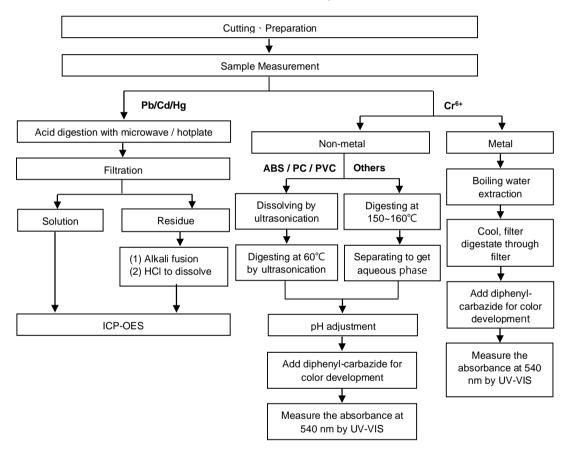


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PANASONIC INDUSTRY CO., LTD.
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Analytical flow chart of Heavy Metal

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



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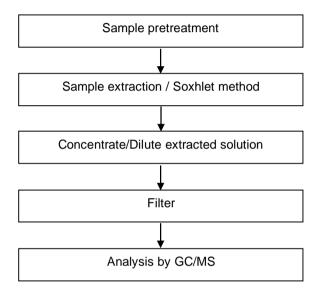
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PANASONIC INDUSTRY CO., LTD. 60, KITASHINKAI, HASEDASHI, YOKKAICHI, MIE, 510-8560, JAPAN

PBB/PBDE analytical FLOW CHART



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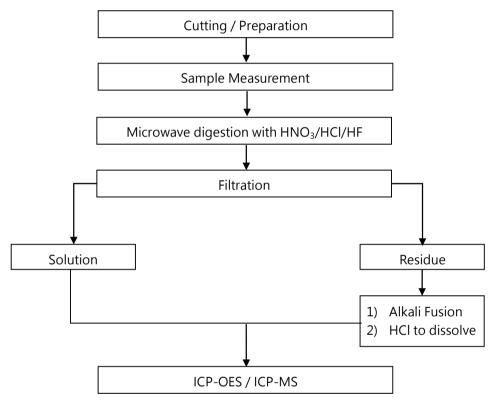
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PANASONIC INDUSTRY CO., LTD. 60, KITASHINKAI, HASEDASHI, YOKKAICHI, MIE, 510-8560, JAPAN

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 3051 \ US EPA 3052】



* US EPA 3051 method does not add HF.

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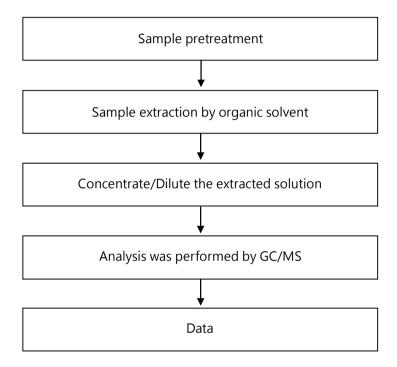


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Analytical flow chart

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



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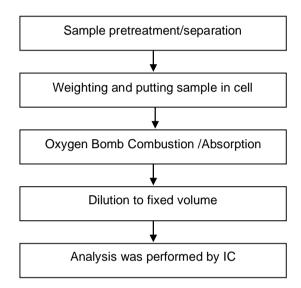
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Analytical flow chart of Halogen



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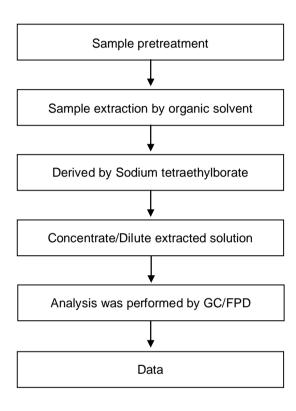
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Analytical flow chart - Organic-Tin



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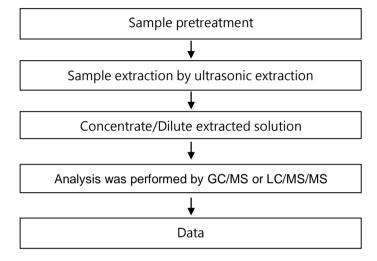
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Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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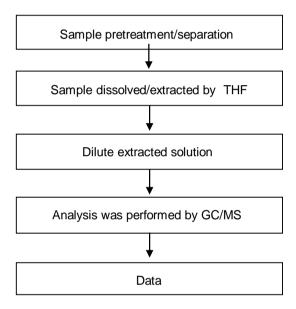


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Analytical flow chart of phthalate content

[Test method: IEC 62321-8]



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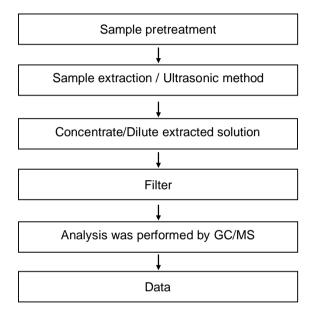
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Analytical flow chart - HBCDD



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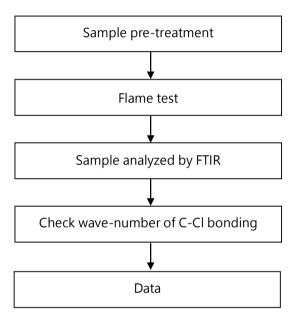
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Analysis flow chart - PVC



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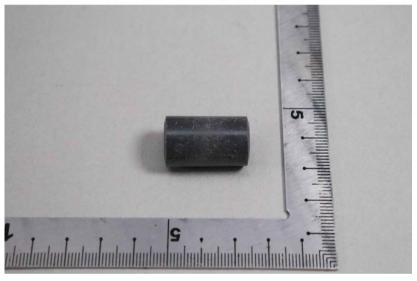


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* The tested sample / part is marked by an arrow if it's shown on the photo. *

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