Test Report

No.: EKR23B01081 Date: 22-Nov-2023

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

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

Sample Name	:	DIE ATTACH FILM
Style/Item No.	:	EM-430

==========

Sample Receiving Date	:	16-Nov-2023
Testing Period	:	16-Nov-2023 to 22-Nov-2023

Test Requested	:	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).
Test Results	:	Please refer to following pages.
Conclusion	:	Based on the performed tests on selected part of 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 Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory-Kaohsiung

PIN CODE: F0429E97

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Part Description

No.1 : WHITE SHEET (EXCLUDING THE RELEASE LINER)

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result No.1	Limit
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb)		mg/kg	2	n.d.	1000
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI)	With reference to IEC 62321-7-2: 2017, analysis was performed by UV-VIS.	mg/kg	8	n.d.	1000
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.	1000
Monobromodiphenyl ether	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	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 Item(s)	Method	Unit	MDL	Result No.1	Limit
Butyl benzyl phthalate (BBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP)		mg/kg	50	n.d.	1000
Diisobutyl phthalate (DIBP)		mg/kg	50	n.d.	1000
Di-(2-ethylhexyl) phthalate (DEHP)		mg/kg	50	n.d.	1000

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. 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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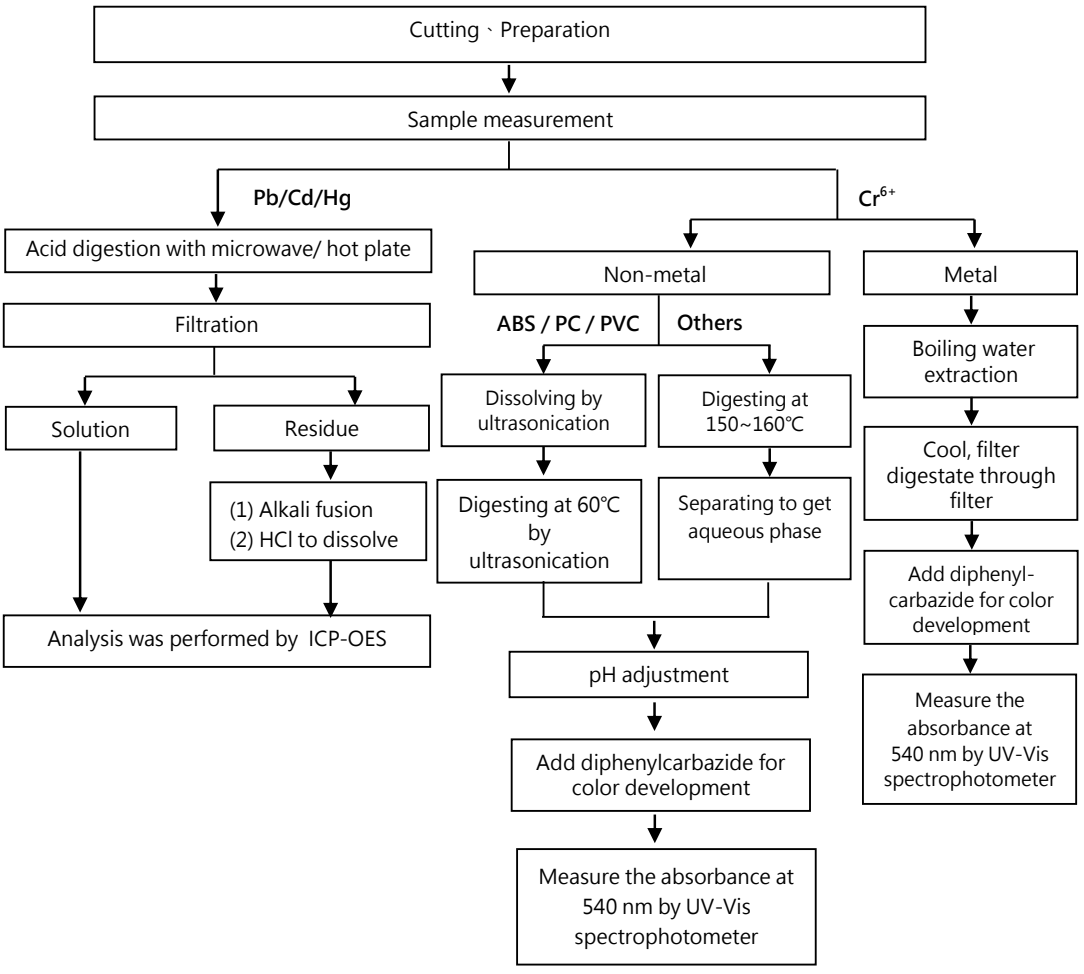
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

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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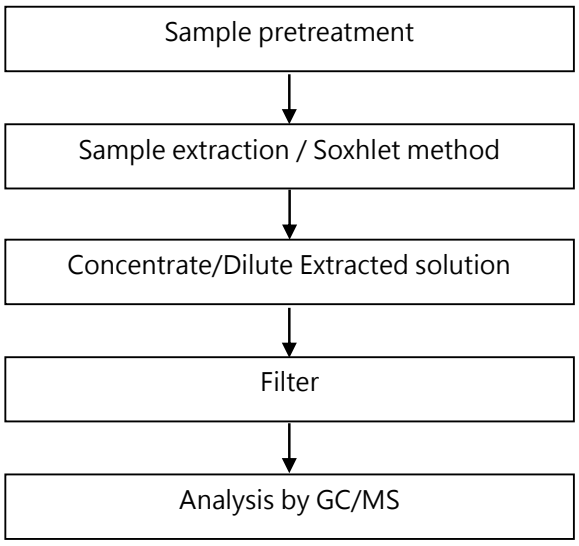
PBB/PBDE analytical FLOW CHART



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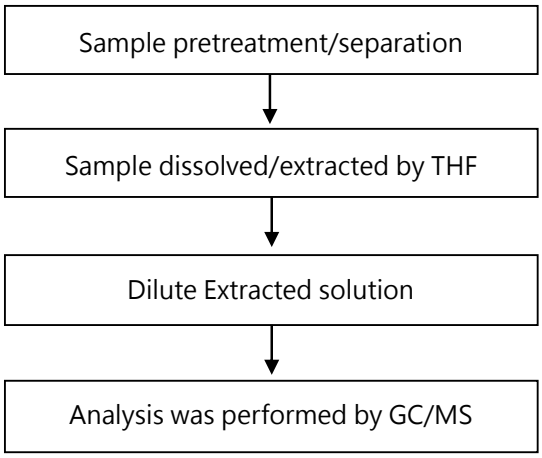
Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



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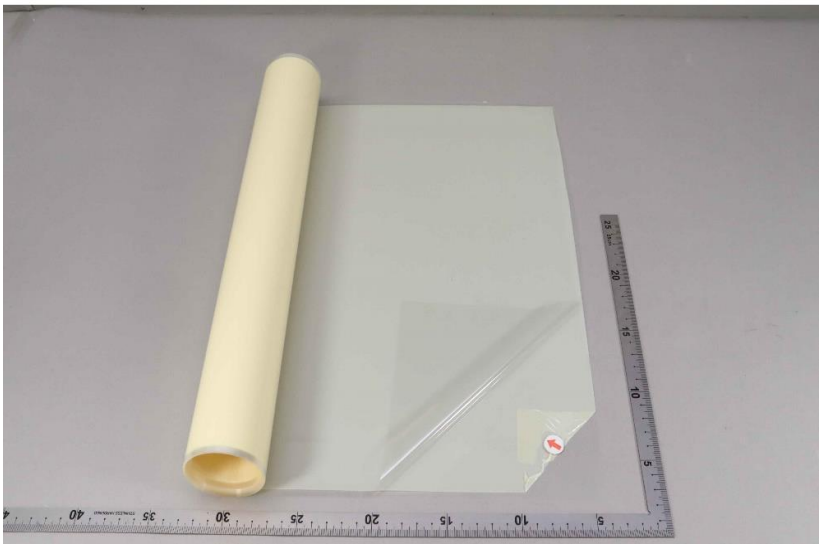
*** The tested sample / part is marked by an arrow if it's shown on the photo. ***

EKR23B01081



** End of Report **

Test Report

No.: EKR23B01082 Date: 22-Nov-2023

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

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

Sample Name	:	DIE ATTACH FILM
Style/Item No.	:	EM-430

==========

Sample Receiving Date	:	16-Nov-2023
Testing Period	:	16-Nov-2023 to 22-Nov-2023

Test Requested : As specified by client, to test Halogen-Fluorine, Chlorine, Bromine, Iodine in the submitted sample.

Test Results : Please refer to following pages.

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

PIN CODE: B8416F96

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Part Description

No.1 : WHITE SHEET (EXCLUDING THE RELEASE LINER)

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
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)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	138
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.
Iodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.

Note :

1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)

NITTO DENKO CORPORATION
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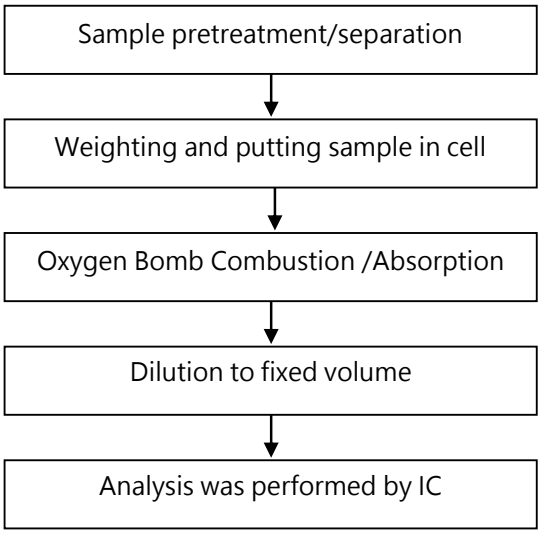
Analytical flow chart of Halogen



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

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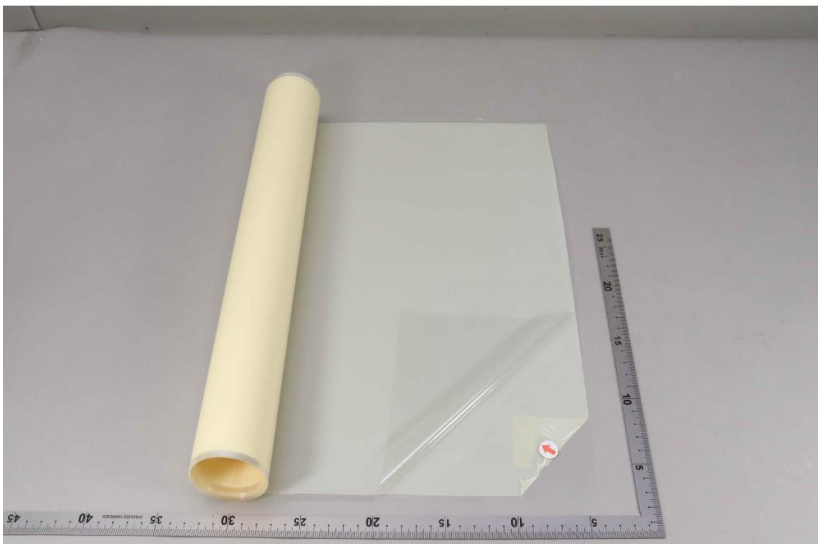

** End of Report **

Test Report

No.: EKR23B01084 Date: 22-Nov-2023

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

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

Sample Name	:	DIE ATTACH FILM
Style/Item No.	:	EM-430

==========

Sample Receiving Date	:	16-Nov-2023
Testing Period	:	16-Nov-2023 to 22-Nov-2023

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.

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

CHECK REPORT
PIN CODE: 214C5594

NITTO DENKO CORPORATION
919, FUKE-CHO, KAMEYAMA, MIE, 519-0193, JAPAN

Test Part Description

No.1 : WHITE SHEET (EXCLUDING THE RELEASE LINER)

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result
				No.1
Perfluorooctanoic acid (PFOA) and it's salt (CAS No.: 335-67-1 and its salts)	With reference to CEN/TS 15968: 2010, analysis was performed by LC/MS/MS.	mg/kg	0.01	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.

Note :

1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)

NITTO DENKO CORPORATION
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PFAS Remark：

The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.)

Classification of Substance Concentration	Substance Name	CAS No.
Perfluorooctane sulfonates and its salts (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	Perfluorooctanesulfonic acid, ammonium salt ($PFOS\text{-}NH_4$)	29081-56-9
	Perfluorooctane sulfonate diethanolamine salt ($PFOS\text{-}NH(OH)_2$)	70225-14-8
	Perfluorooctanesulfonic acid,tetraethylammonium salt ($PFOS\text{-}N(C_2H_5)_4$)	56773-42-3
	N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
Perfluorooctanoic acid and its salts (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	Silver perfluorooctanote (PFOA-Ag)	335-93-3
	Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	Lithium perfluorooctanoate (PFOA-Li)	17125-58-5

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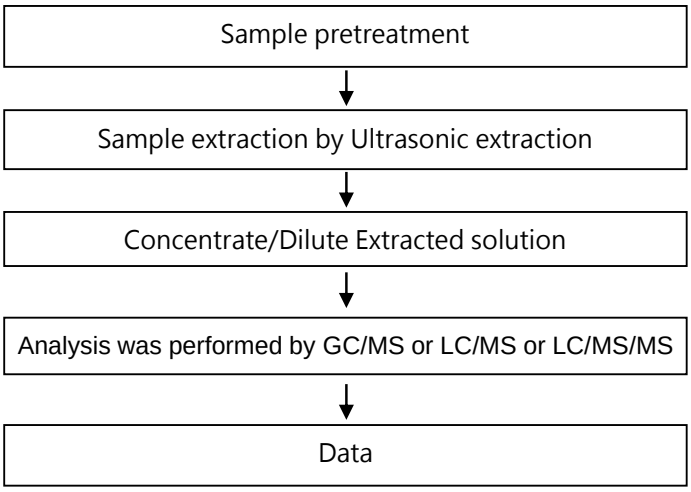
Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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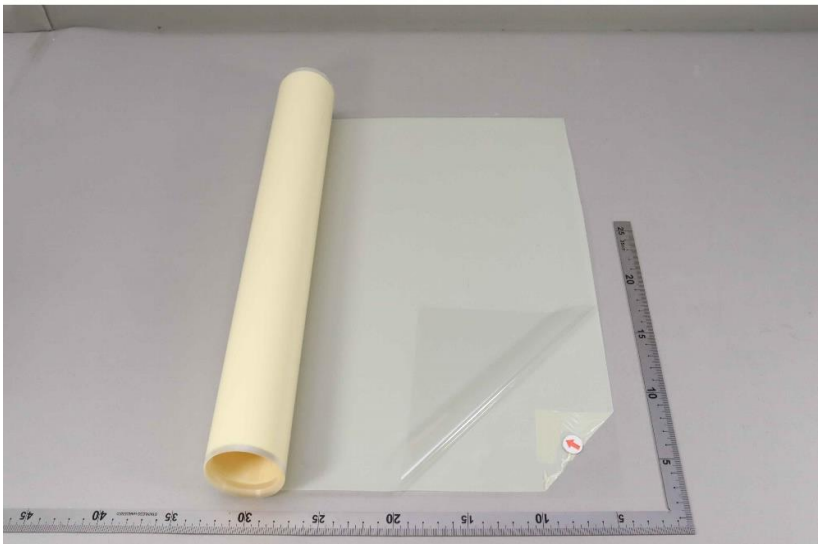

** End of Report **